TC·HELICON

VOICELIVE RACK

MIC-CHANNEL & VOCAL EFFECTS PROCESSOR

USER'S MANUAL

v1.0

Safety

Safety Instructions

1 Read these instructions.

2 Keep these instructions.

3 Heed all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with dry cloth.

7 Do not block any ventilation openings.

8 Install in accordance with the manufacturer's instructions.

9 Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

10 Only use attachments/accessories specified by the manufacturer.

11 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Warning!

- To reduce the risk of fire or electrical shock, do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
- Do not install in a confined space.

Service

All service must be performed by qualified personnel.

Caution

You are cautioned that any change or modifications not expressly approved in this manual could void your warranty.

EMC/EMI

This equipment has been tested and found to comply with the limits for a Class B Digital device, pursuant to part 15 of the FCC rules.

These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy and – if not installed and used in accordance with the instructions – may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception – which can be determined by turning the equipment off and on –, the user is encouraged to try correcting the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For Customers in Canada:

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Introduction

Before You Get Started

1. Check to see if this manual has been updated click the following link:

www.tc-helicon.com/products/voicelive-rack/support/

2. Download VoiceSupport.

Get the latest firmware for your product, tips and tricks, and videos. Click the following link to download and install VoiceSupport

www.tc-helicon.com/voicesupport.

3. Register Your Product in VoiceSupport.

Click on the ACCOUNT button within the VoiceSupport application.

Thank You

Thank you for purchasing VoiceLive Rack, a complete, programmable mic channel and vocal effects processor. This product is the result of input from customers like you who requested the premium features of VoiceLive 2 in a 19" rack chassis. We hope you enjoy making your music sound even better with VoiceLive Rack.

About TC-Helicon

TC-Helicon is the only pro audio company 100% dedicated to providing creativity and control to singers. We are a dedicated group of engineers, researchers and product specialists based in Victoria BC, Canada, who spend every waking moment of their working lives listening, talking, singing, and interacting with singers and those who have passion for the singing voice.

VoiceLive Rack Features

- High quality, dedicated vocal channel and effects processor
- 8 fully editable effect blocks
- Total recall of mic preamp and Setup menu parameters in up to 10 user profiles
- Unique touch interface on front panel
- Large, bright LCD screen
- Wizard feature to help users find presets
- Up to 4 intervals of NaturalPlay harmony available
- Harmony reference can be guitar, MIDI or MP3 input
- Global adaptive tone and auto-chromatic pitch correction effects
- Mic Control feature allows remote effects control with included MP-75 mic
- 400 user presets
- USB for audio streaming, updates, and backup to computer
- Discrete guitar mixing and effects to main output

MP-75 Mic

Warranty

To view the general warranty for TC-Helicon products click below or visit:

www.tc-helicon.com/support/warranty/

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Front Panel

Touch to access input gain adjustment screen or hold to enter auto input gain feature.

Touch to browse presets based on tags or to load presets on demand.

Touch Home to exit any menu and set screen to show main preset display.

Push in to apply power.

Connect headphones to monitor main output mix.

Touch to access Setup menu and parameters.

Touch Home to exit.

Touch to access Store menu for presets and setups as well as management features.

Touch to access Edit menu and parameters or touch Home to exit.

Displays preset steps if any (Count) and current step in Home mode.

Displays parameter remote controlled by Mic-control feature using optional MP-75 mic.

Main wheel locates presets in Home mode and selects rows in edit modes.

Displays preset name and number in Home mode or all edit parameters in edit modes.

Navigate arrows will increment/decrement presets by 1 in Home mode or select rows in edit modes.

In Home screen, turning Mix knobs 1 detent will temporarily display 4 global mix values then allow adjustment.

In all edit modes Mix knobs are used to adjust parameter values.

Tab/Step arrows cycle through preset step chain (if any) and allow management of step chains in Home mode.

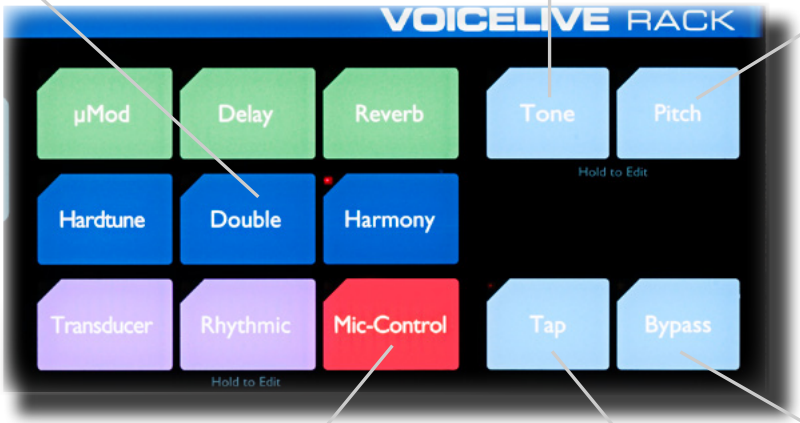
Tab/Step arrows cycle through tabs in edit modes.

Front Panel

Touch any to engage effects or hold to jump directly to the effect's edit menu.

Touch to activate adaptive EQ, compression, de-ess and gate or hold to edit.

Touch to activate auto-chromatic pitch correction or hold to edit correction settings.



Mutes all processing except Tone when Tone is active.

Duplicates the switch on an MP-75 mic to activate switched parameters.

Tap at song tempo to set delay time in Home mode.

Back Panel

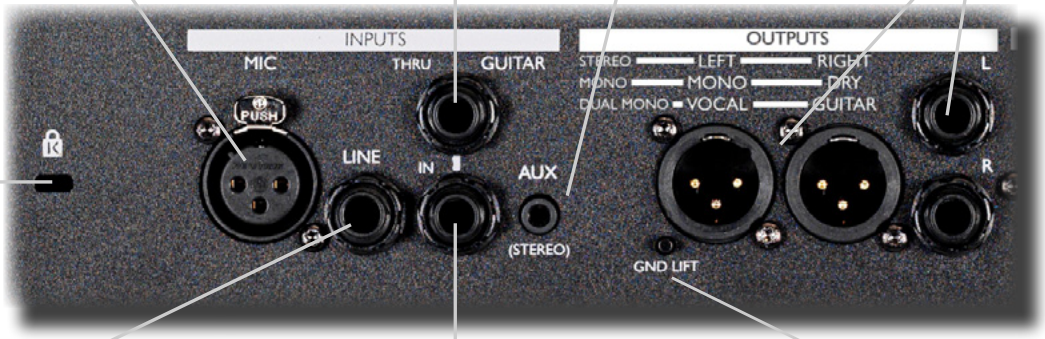
Connect dynamic or condenser mic here. Input gain and phantom power on/off located in Setup menu.

Passes dry guitar signal to an amplifier or PA. Connection here will remove guitar from the main mix.

Auxiliary input from mp3 player can be mixed to outputs and be used to guide Harmony and Hardtune.

Main outputs are balanced and default output is stereo. Mono and dual mono modes are configured in Setup menu.

Attachment port for Kensington® lock



Connect TRS balanced or unbalanced cable from mixer here.

A guitar connected here can guide Harmony and Hardtune effects. If Thru is not connected, guitar is mixed to main outputs with dedicated effects.

If ground buzz is heard in your PA, push the Ground Lift in. Otherwise leave it out.

S/PDIF output always available. Full Mix or Vocal & Guitar (LR) configured in Setup menu.

Hardware MIDI ports allow remote harmony and preset control from MIDI keyboards etc. Ensure USB Control is set to Off in Setup menu to use this input.

USB I/O connects to a computer for audio I/O and system functions such as preset backup and version updates.

AC cable strain relief minimizes shutdowns due to cable pulling.

S/PDIF digital input can be fed dry to analog mix outs or used as vocal and instrument (LR) inputs for effect processing.

Connect optional TC-Helicon Switch 3 footswitch here for additional control per preset or globally.

Connect supplied AC adaptor here.

Quick Start

▶ a. Connections

1. Turn down your mixer channel or main PA volume.
2. Connect a Mic or Line level input from the mixer to the respective input jack on VoiceLive Rack.
3. Connect the XLR or TRS stereo outputs to your mixer/PA.
4. Connect the supplied AC adaptor to the unit and press the POWER button in.

▶ b. Set input level

1. Touch the Bypass button so it flashes.
2. Touch the Input Gain button.
3. Sing or start playback while watching the IN meter in the display
4. Adjust the IN GAIN setting with the knob below the onscreen parameter until no CLIP message occurs.
5. Touch Home to exit Input Gain setup.

▶ c. First audio

1. Select preset 6: BRIGHT DOUBLE with the large wheel or the Navigate up/down arrows.
2. Sing or start dry vocal playback then raise your monitors/PA level until you hear the VoiceLive Rack output at a comfortable volume.
3. Touch the Bypass button to hear the effect programmed into the current preset.
4. Now you can select different presets and/or touch the effect blocks (µMod, Delay, Reverb etc) to turn them on and off within the current preset.

Basic Operation

▶ Selecting presets

There are over 200 factory programmed presets in VoiceLive Rack. Presets are loaded as soon as the name appears in the LCD window.

To select presets:

1. Ensure the Home button LED is lit.
2. Turn the large encoder wheel. Detents in this wheel allow increment and decrement by 1 or;
3. Touch the Navigate up or down arrows to browse by single presets.

▶ Searching for presets using tags

The Wizard function organizes the presets by user-selected tag filters and alphabetically so you can search more effectively for them. The Wizard also allows you to locate *but not automatically load* a new preset while another is currently active.

To search for presets using the Wizard:

1. Touch the Wizard button
2. Use the Mix knobs to select the Sort function and/or to choose up to 3 tag criteria.
3. Turn the large encoder to view the filtered results.
4. Press the Wizard button to load the highlighted preset.

▶ Using Harmony or Hardtune presets with a connected instrument or music track

Presets that have the Harmony or Hardtune buttons lit require a musical reference in order to sound musically correct. VoiceLive Rack automatically senses which input is connected (see following) in order to use it as a reference.

1. Connect an accompaniment instrument or music player to VoiceLive Rack. This can be either:

- A guitar connected to the GUITAR IN
- A MIDI keyboard (channel=1) connected to the MIDI IN
- An MP3 player connected to the AUX IN

2. Select a harmony-based preset such as 1: Sixth Encore.
3. Play the accompaniment instrument or track while singing into VoiceLive Rack. The harmony intervals will follow the changing chords of the music.

By default, the GUITAR and AUX inputs are routed to the main mix output. Their levels can be muted or adjusted in the GUITAR and I/O tabs of the Setup menu respectively.

▶ Using Harmony or Hardtune presets without a connected instrument or track

This method, which uses a single key and scale generally throughout an entire song, will produce useful musical results for many songs but not all. Experimentation in a rehearsal setting is essential before using this method before an audience.

1. An accompaniment is required so the singer can sing relative to a key and scale. This can be a piano, acoustic guitar, playback etc.
2. Touch the Setup button and navigate to the SYSTEM tab using the TAB/STEP arrows.
3. Set GLOBAL NATURALPLAY to SCALE and GLOBAL KEY/SCALE to ON.
4. Touch the Edit button and navigate to the HARMONY tab.
5. Set the KEY and SCALE* parameters to match the song accompaniment. This is often the first or last chord in the song.

Basic Operation

6. Sing while the accompaniment plays.

* There are 3 major scales and 3 minor scales; generally Major 2 and Minor 2 will work for more songs. See the Scales Diagram at the end of this manual for details.

Touch Home to exit and try different presets, all of which are set to the same key by the Setup parameters changed in step 3.

▶ Modifying presets

The effect block buttons, the arrow buttons and tabbed menus allow you to make changes to the current preset quickly.

To modify a preset by enabling and disabling effect blocks:

1. Touch any one or a group of effect blocks to reverse their on or off state. The buttons' LEDs will show their status.

To edit effect block parameters including preset mix:

1. There are two ways to enter the effects editing menu -

a. Hold any effect block button for 1 second. This will present its editing menu. The on/off status of the effect will not change however.

b. Touch the Edit button and use the Tab/Step arrow buttons to locate the tab of effect you want to edit.

2. Adjust parameter values on the highlighted row with the Mix knobs.

3. Select another row with the wheel or the Navigate up/down arrows.

4. To finish, either touch Store twice to save your changes or touch the Home button to allow further preset navigation without saving.

▶ Changing the global mix

There are 4 global mix levels adjustable with the front panel Mix knobs. When you adjust these controls at the Home level, the mix screen will show values for the controls as well as Mic/Line input, Guitar input and main output levels.

- Voices - Combined level of the Harmony and Doubling voices.
- Delay/Reverb - Combined level of the Delay and Reverb effects.
- Guitar - If a guitar is connected to the Guitar input and no Guitar Thru connection is made, this control varies the level of the guitar in the main output mix.
- Output - Adjusts the overall output level to the main outputs and the Headphone output.

▶ Adjusting the Guitar features

The Guitar input has its own Reverb and µMod processors, 3 band EQ and compressor. As long as the Guitar Thru has no jack inserted, the guitar will be routed to the main output mix with these effects added.

To adjust the Guitar effects:

1. Touch the Setup button.
2. Use the Tab/Step arrow buttons to navigate to the GUITAR tab.
3. Select and adjust parameters within the GUITAR tab using the Navigate arrows and the Mix knobs.

All changes are recalled automatically the next time the unit is powered.

Basic Operation

▶ Phantom, Mono, MIDI etc. - the Setup menu

Global parameters are adjusted in the Setup menu. Changes made in this menu are automatically stored as they are made. Note that some settings of parameters such as DIGITAL IN and LEAD MUTE can result in unexpected sound (or lack thereof) from the unit.

To adjust global setup parameters:

1. Touch the Setup button to enter the Setup menu.
2. Use the Tab/Step and Navigate arrow buttons to locate parameters then make changes with the Mix knobs.
3. Touch Home to exit.

▶ Adjusting the Tone settings

The goal of the single Tone button, with its adapting Shape EQ, compression, de-essing and gate is that adjustment is done automatically. If, however, you want to make manual adjustments, they are easy to perform.

To change the Tone settings:

1. Hold the Tone button to reveal its menu in the display.
2. In the first TONE tab, sing while you make general adjustments such as adjusting brightness and bass rolloff via the SHAPE control or increasing or reducing compression amount with the COMPRESS control.
3. Use the Tab/Step arrows to tab over to the individual effects and disable the ADAPTIVE parameter if desired. This will reveal additional manual adjustment settings.

▶ Preset chaining with the Step feature

Each preset can consist of up to 10 steps that you can step through using the Tab/Step arrow buttons or a footswitch. Steps can be edits of the starting preset or other presets copied into the slots.

To add a step to a preset:

1. Locate the desired starting preset and hold the right Step arrow button.
2. Follow the onscreen prompts to insert and delete steps in your chain.

Note that inserted steps are automatically stored. See "Restoring..." below to return the preset to its original state.

▶ Performing a global reset

This can be performed to initialize all presets and system parameters back to their factory defaults.

To perform a global reset:

1. Power up the unit.
2. When the first text is displayed in the LCD window, hold the 4 buttons listed below and continue to hold until the reset prompt is displayed:

- µMod
- Delay
- Reverb
- Tone

This procedure can take up to 2 minutes.

Basic Operation

▶ Restoring individual presets to factory settings

To reset a preset to its original settings:

1. Locate the Manage Preset tab in the Store menu.
2. Use Erase User Preset to select the preset to restore and set Confirm to Yes.
3. Touch the Store button.

▶ Mic-Control and Footswitch assignments

External control of parameters via the MP-75 microphone and Switch 3 footswitch can be assigned uniquely per preset or globally.

To set Mic-control and Footswitch assignments:

1. Locate the Mic-Control and/or Switch3 tabs in either the Setup menu (for global assignment) or in the Edit menu (unique per preset).
2. Make the changes required.
3. If you have made a preset assignment it will need to be stored with the preset. Global assignment does not require storing.

The Tone Button

Tone Overview

The Tone button activates what we call the "Live Engineer Effects". These are different from standard vocal processing effects in that they adjust their settings to your particular voice and the way you sing at different times of your performance just like a professional audio engineer will. All EQ and compression enhancements applied here will affect the overall sound of VoiceLive Rack including Harmony, Doubling, Reverb etc.

The suite of effects that make up Tone are:

- Adaptive Shape EQ
- Adaptive Compression
- De-Ess
- Adaptive Gate

The TONE Tab

Press and hold the Tone button to enter this screen and make adjustments or view settings. This will present the TONE tab allowing convenient control of these four processors in one screen. At any time you can exit the tab menus by pressing the Home button.

The factory settings for the Tone button are:

- SHAPE

  ADAPTIVE=X(On), SHAPE=50%
- COMPRESS

  ADAPTIVE=X(On), COMPRESS=50%
- DE-ESS

  DE-ESS=50%
- GATE

  ADAPTIVE

These settings are intended to apply to a broad range of singers' tastes and PA equipment. Making adjustments consists of turning the Mix/Edit knobs below the LCD and listening to the results. You can also cycle the Tone button on and off while editing to hear the difference between your effected and non-effected voice.

Note that there is a slight lag between adjusting the Adaptive effects and hearing the effect as the algorithm re-assesses your voice input.

▶ The ADAPTIVE Check Boxes

These show whether the automatically-adjusting Adaptive feature is enabled for the SHAPE or COMPRESS controls.

NOTE: If either or both ADAPTIVE check boxes is unchecked, the associated control is set to MANUAL. Manual adjustment is possible by using the Navigate buttons to go to the edit tab associated with it and changing the controls on that tab.

▶ SHAPE

"Shape" is the name given to the automatically adjusting EQ that is activated by the ADAPTIVE check box. When the Adaptive feature is activated, Shape processing offers an EQ curve that adds an airy brightness, or "sizzle" to your voice while reducing "mud" due to the proximity effect from singing closely into a cardioid microphone. Adjusting the control from 0% to 50% reduces mud while increasing brightness to a useful range for your voice. Turning from 50% up to 100% adds more brightness.

Reducing Mud:

For singers who have a voice with less bass frequencies, the "mud" reduction may be less and perhaps not noticeable at all. This is a good thing - your voice is nicely balanced regarding bass frequencies. For the average male singer or women who sing closely on their mic, the reduction in bass will be noticeable and beneficial. When voices have too much bass, they tend to become lost in the other instruments that occupy

those frequencies resulting in sonic clutter. Reducing bass has the natural effect of emphasizing mid and upper frequencies which allow the voice to cut through dense instrumentation.

Lastly, the term "proximity effect" and "cardioid" need to be clarified as they can cause bass build up. The typical microphone used by singers has a pickup pattern called "cardioid" or heart-like, because it picks up less sound at the rear than at the front. This intends to reduce other instruments or sounds from getting into the front of the mic. A side effect of this that singing closely on a cardioid mic adds more bass frequencies than your voice actually has. This is called "proximity effect" because it is caused by closeness to the mic. The adaptive Shape feature of VoiceLive Rack listens continually to your voice through your mic and adjusts to make your voice sound like it is professionally produced and balanced.

Adding Highs

The other facet of the Shape feature is that it adds high frequencies, also known as "air" or "presence" without making your voice sound "tinny". The vocal sounds we hear on CDs and the radio are not typically what you hear when you listen to a singer acoustically. Commercial vocal sounds are more of a hyper-reality designed to flatter the voice or voices and make them cut through a group of instruments and thus make a larger impression on the listener. The Shape feature, used at moderate settings, emulates this sound through the average microphone and PA system.

When making Shape adjustments, it's important to sing while listening to the PA system your audience will hear rather than only judging by your monitor sound.

▶ COMPRESS

With the ADAPTIVE control activated, the COMPRESS control reduces the amount of range between louder and softer singing to produce more even-sounding vocals. It does so by listening to your singing over time (less than 30 seconds) and adjusting accordingly.

Typical compressors require multiple controls, knowledge and experience, and time spent testing and refining over a performance. With TC-Helicon's Adaptive Compress feature, these are not required.

The factory setting of 50% strikes a good balance between moderating dynamics in your singing without incurring feedback, a side effect of compression used in a live mic setting. If you have a high quality monitoring/PA setup with a flat frequency response and you want more compression, by all means add more with the COMPRESS control. Be aware though, that average quality systems have frequency peaks that may cause feedback with lots of compression combined with Adaptive Shape EQ.

- Note that, in order for the Adaptive Compression feature to work properly, you must have your mic gain set properly either with by using auto MIC GAIN or by setting it manually.

▶ DE-ESS

There is a side effect that comes from adding high frequencies and compression to your voice, and that's excessive sibilance. Sibilance can be described as the brief whistle that accompanies "S", "T" and "D" syllables in your vocal performance. Again, when singing acoustically, there is no issue with these sounds. It's when you amplify and combine with boosted highs and compression that they can become piercing.

VoiceLive Rack's DE-ESS control monitors the level of sibilance and, when it is detected, will quickly and transparently reduce it. Typically, it's

only briefly required and it then gets out of the way allowing the silky brightness to remain on the voiced portion of your singing.

There is only the single DE-ESS control; no other manual adjustment settings are required. The factory setting of 50% gently reduces sibilance without becoming obvious. Higher settings of compression and Shape or a bright, sibilant voice may require a higher setting.

▶ GATE

When set to the factory default of ADAPTIVE, the GATE control on the Tone Edit screen helps in two very important ways by:

1. Minimizing feedback
2. Reducing the amount of audible effects processing on sounds entering the mic other than your voice.

A typical, fixed gate works by shutting off, or reducing the level of any signal below a threshold that you set. When you sing louder than that threshold, the gate will open and your vocal will come through the PA. When you aren't singing, the gate will close and block sounds around you.

The Adaptive Gate in VoiceLive Rack works automatically with your singing style to provide the optimum balance between how loud you have to sing to open the gate and how much other noises are reduced.

For troublesome audio environments, or for those who are familiar with setting manual gate parameters, there is also a MANUAL setting on this page.

The Tone Button

EQ Tab Overview

The EQ tab is where you control the tone shaping of your voice. It is where you can turn the ADAPTIVE feature on and off for the SHAPE EQ.

EQ Tab With ADAPTIVE On

When the ADAPTIVE control is set to ON (the factory default), most of the adjustment is done automatically so fewer controls are required. These are:

- ADAPTIVE ON/OFF
- SHAPE AMOUNT
- WARMTH ON/OFF
- ADAPTIVE ON/OFF

This activates the automatic EQ algorithm and changes the control set for the EQ tab. When set to ON, this places an X in the ADAPTIVE check box in the TONE tab and allows editing of the SHAPE control in that tab. When set to OFF, this presents the manual parametric EQ controls, and removes the check in the ADAPTIVE box on the TONE tab.

▶ SHAPE

This is a duplicate of the SHAPE control found on the TONE tab discussed previously.

▶ WARMTH

This control returns a narrow band of low frequencies for singers who prefer this sound. The majority of the "mud" frequencies are still reduced automatically when using this control.

EQ Tab With ADAPTIVE Off

Turning ADAPTIVE off presents manual parametric EQ controls for users who understand this type of equalization. There are 3 bands of control:

- Low band shelving
- All band fully parametric peak/dip control
- High band shelving

The two "Shelving" EQs boost or cut all frequencies below or above the frequencies set by the LOW FREQ and HIGH FREQ controls respectively. These are most like the common Bass and Treble controls on a stereo system.

The "Parametric" EQ boosts or cuts the frequencies within a selected band that is defined by a center frequency (PARA FREQ) and a width control (PARA WIDTH). For vocals, the gain of a narrow parametric band is typically reduced to overcome room or voice resonances and smooth the sound although experienced users may boost a band felt to be missing in a particular voice as well.

The three GAIN controls allow +/- 12 dB of adjustment. The 3 FREQ controls range from 20 Hz to 20 kHz.

▶ LOW GAIN

Boosts or cuts the range of frequencies below the frequency set by the LOW FREQ control.

▶ LOW FREQ

Allows you to define the frequency range for the low shelf by choosing the highest frequency below which boosting or cutting is possible.

▶ HIGH GAIN

Boosts or cuts the range of frequencies above the frequency set by the LOW FREQ control.

The Tone Button

▶ HIGH FREQ

Defines the frequency range for the high shelf with the selection of the lowest frequency above which boosting or cutting is possible.

▶ PARA GAIN

Boosts or cuts the band of frequencies centered at the setting of the PARA FREQ control and its associated WIDTH.

▶ PARA FREQ

Defines the center of the parametric band.

▶ PARA WIDTH

Defines how narrow or wide the parametric band is to be. The ends of the control range are labelled "NARROW" and "WIDE" to add meaning to the numbers in the middle of the control range.

The Tone Button

COMPRESS Tab Overview

This tab offers further control of the compression effect. The controls on this tab change depending on the status of the ADAPTIVE setting in the same way as the EQ tab.

COMPRESS Tab With ADAPTIVE ON

The ADAPTIVE Compression algorithm performs automatic processing which reduces the number of adjustable parameters. As such, once ADAPTIVE is enabled, the only control is COMPRESS.

▶ COMPRESS

This allows you to vary the amount of peak reduction by the ADAPTIVE compression algorithm. The factory value is 50% but you can increase or decrease as you require.

COMPRESS Tab With ADAPTIVE OFF

Turning off ADAPTIVE compression switches compression to manual control. Be sure to reduce the level of your PA or switch to headphones when adjusting the manual compressor because high settings can cause more gain and thus feedback.

▶ THRESHOLD

This sets the singing level at and above which the amount of gain reduction (compression) specified by the RATIO control will occur. The range is 0 dB to -30 dB: 0 dB being the loudest input signal VoiceLive Rack can accept without distortion and -30 dB being a very quiet signal. If you sing consistently more quietly than the THRESHOLD, you will not hear any compression. You can see your input level on the IN meter on the Home screen. A good setting for experimentation is -10 dB.

▶ RATIO

This sets how much gain reduction you prefer when your voice level goes above the threshold. The range is from 1:1 (no gain reduction) to 4:1 (maximum vocal gain reduction). The default setting for RATIO is 4:1.

The number on the left side of the : (colon) symbol is how loud the peaks in your singing have to be in order to achieve a 1 dB gain increase. A brief example of how adjusting the ratio of compressor works is this: say a word you sang went 4 dB over the threshold when the Ratio was set to 4:1. The compressor would only allow it to go 1 dB louder.

Note that the RATIO control has to be set above 1.0 (1.0:1) to apply any compression regardless of the setting of the THRESHOLD.

Also note that automatic makeup gain occurs depending on your combination of THRESHOLD and RATIO. A side effect of compression is that it can reduce apparent level until makeup gain is applied to raise the overall level.

The Tone Button

GATE Tab Overview

The Gate feature can assist in:

1. Minimizing feedback.
2. Reducing the amount of audible effects processing on sounds entering the mic other than your voice.

▶ GATE

This sets the Gate type. The factory default is ADAPTIVE, which performs automatic level assessment for the average musical setting. You can also turn the gate to OFF with good results if you are in a quiet, low volume musical environment. This can be set to MANUAL if you have more challenging requirements. When the GATE is set to MANUAL, an additional parameter, THRESHOLD, is displayed.

▶ LEAD ATTEN

This controls how much your lead voice level is reduced (attenuated) when your voice falls below the Gate threshold and the Gate closes. This setting applies whether the GATE is set to ADAPTIVE or MANUAL. The factory default setting of -3 dB (a reduction of 3 dB) is gentle enough that if your voice strays below the threshold, it is not cut off completely. If you are in a feedback-prone environment (loud monitors plus Shape and Compress on) you can increase this to reduce more. A setting of 0 dB offers no gain reduction on your lead voice at all. Settings of -30 to OFF effectively mute your voice when the Gate is on.

▶ HARM ATTEN

This sets the amount of attenuation for the Harmony and Doubling voices when the Gate closes. They have a separate attenuation setting to reduce chatter caused by instrument sounds entering the mic and being harmonized when you aren't singing . The factory default attenuation amount of -10 dB should work well in many situations, but you can further reduce the level if you still hear harmonized instrumental chattering when you stop singing.

▶ THRESHOLD (MANUAL Gate Only)

This parameter becomes visible when the GATE has been switched to MANUAL. The THRESHOLD defines the minimum singing level you need to reach in order for the Gate to open and let your voice sound. The factory default setting of -40 dB is very sensitive to allow a wide range of singing levels but it may also allow more nearby instrumental sounds through when you are not singing. In this case, further adjustment from -39 dB and upward may be needed.

The Pitch Button

Pitch Button Overview

Pressing the Pitch button activates Auto Chromatic pitch correction. For most applications, this is all that is required to set this feature. There is no need to set Key or Scale; all notes that you sing in the 12 tone western chromatic scale are corrected to the nearest scale tone.

This type of vocal pitch correction is quite subtle at its factory setting of 50% but even the most highly skilled and on-pitch singers will hear a slight chorusing from the PA or monitors with it engaged.

Press and hold the Pitch button to access the PITCH tab and adjust the single parameter for this feature. Once you see this tab, the Pitch button can be cycled on and off to allow you to hear the difference. Press the Home button to exit the Pitch edit tab.

▶ AUTO-CHROMATIC AMOUNT

The factory default value of 50% is active when you enter the PITCH edit tab. Turning the control towards 0% reduces the correction effect and turning towards 100% increases it. Above 50% the effect becomes more noticeable when you slide from note to note. This is the effect of faster transition speed between your input note and the closest scale tone as well as the fact that the algorithm is trying to pull you closer to the target.

For those singers who want to use or experiment with scale-based pitch correction and perhaps even the jagged, modern HardTune effects, there are presets set up specifically for this that can be found by pressing the Wizard button and choosing CORRECT or HARDTUNE as the Tag.

The Tap Button

Tap Button Overview

This button provides convenient access to tempo setting for the Delay and Rhythmic effects. You can tap it at any time to synchronize these effect blocks to the beats of a song.

The display will temporarily show the BPM (Beats Per Minute) derived from your most recent two taps.

To enter an exact BPM, you can use the up or down Navigate buttons while the TEMPO display is shown on the display for fine tuning.

The Delay or Rhythmic effect buttons must be active for Tap tempo to have an audible effect.

Upon loading a new preset, the LED in the Tap button will flash indicating the Delay SOURCE in the preset is set to TAP. If the Tap LED does not flash upon loading a preset, the Delay SOURCE is set to TIME or MIDI. Regardless of the initial setting, tapping the Tap button will temporarily modify the current preset so that its SOURCE becomes TAP.

To prevent the tempo from changing as you load different presets, set GLOBAL TAP TEMPO in the SYSTEM tab of the Setup menu to ON.

The Bypass Button

Bypass Button Overview

Pressing the Bypass button will mute all active effects blocks from the vocal audio path *except Tone if it's active*. This is done so that your basic tone remains the same as you address the audience during Bypass. To remove Tone from Bypass, press the Tone button.

The Bypass button will flash and the display will show BYPASS as long as the unit is bypassed.

Bypass has no effect on the Guitar or Aux inputs.

Detailed Operation

Overview

Much of the operation of VoiceLive Rack is covered in the Quick Start and Basic Operation chapters. This Detailed Operation chapter offers additional procedural detail where it's needed. For button menus and parameter descriptions see the Setup, Edit etc. menu chapters.

Harmony and Hardtune Guided by a Guitar

TC-Helicon's NaturalPlay algorithm can listen to chords played on an electric guitar or electrified acoustic guitar to guide the Harmony and the Hardtune effects. Both need to stay "in key" or musically relevant to accompanying instruments.

▶ Acoustic guitar

If you haven't by now, connect a cable from your pickup-equipped acoustic guitar to the GUITAR IN as described in the Quick Start. You should now hear your guitar sound mixed with your voice.

To adjust the balance of guitar and voice, ensure the HOME button is lit then turn the third Mix/Edit knob. This will present the MIX screen so you can adjust the level of your guitar.

Now, sing while you sample the harmony- and Hardtune-based presets with effects closely related to your guitar playing. You should now hear nicely produced lead vocal, harmony and/or Hardtuned vocals and guitar from your PA system or headphones.

The recommended pickup is the typical under-saddle type because potential mistracking can result from resonances generated by soundboard-mounted pickups.

▶ Electric guitar

Connect a cable from your electric guitar to the GUITAR IN. Connect another cable from the GUITAR THRU to your first guitar effects pedal or to your amp. Set your guitar amp volume to a level compatible with your vocals.

By connecting a jack to the GUITAR THRU, the guitar signal is removed from the internal mixer and effects paths in VoiceLive Rack.

If you hear a buzz from either your guitar amplifier or the PA VoiceLive Rack is connected to, press the GND LIFT (ground lift) button to silence it.

Now you can sample the harmony- and Hardtune-based presets with the effects musically related to your guitar playing.

▶ Guitar performance tips

To ensure that the harmony voices follow your guitar closely, it's best to play cleanly with chords containing at least two notes. If you want to sing right at the start of a song, it's important to briefly play a chord first. A recognized chord will show "NP" in the LCD display.

Your guitar should be well-tuned. TC Electronic's PolyTune is perfect for this.

If the song section you want vocal harmony or Hardtune effects on has fast chord changes, single note runs or very slow arpeggios, it may be better to use presets based on a fixed Key. To find out more about this see Harmony and Hardtune guided by a fixed key.

Harmony and Hardtune Guided by a MIDI Keyboard

Using MIDI opens up a range of harmony options. This section will discuss the basics of setting MIDI channel and performing with a MIDI keyboard/synth to control Harmony and Hardtune.

Detailed Operation

▶ MIDI hookup and channel selection

If you haven't already, connect a MIDI cable between your keyboard's MIDI out and VoiceLive Rack's MIDI IN. Play a note on your keyboard and check VoiceLive Rack's display to see if the MIDI indicator lights. If it doesn't, set the MIDI transmit channel of your keyboard to 1 (VoiceLive Rack's default). If you want VoiceLive Rack to receive on another MIDI channel, locate the MIDI tab in the Setup menu and set CHANNEL to the same as your keyboard transmits on. Check the display as you play your keyboard to confirm reception.

▶ MIDI IN and USB

To use the MIDI IN jack *while you have a USB cable connected*, locate the SYSTEM tab in the Setup menu and turn the USB CONTROL setting to OFF. This will enable the MIDI IN jack. Alternatively, you may also remove the USB cable to access MIDI IN.

When you want to restore computer control of VoiceLive Rack over USB, or you want to access the VoiceSupport application's features, you can turn the USB CONTROL parameter back to On.

▶ MIDI-controlled Harmony and Hardtune

Now that you've followed the preceding section, you can sample the many presets that feature the Harmony and Hardtune effects. Load a preset with one or both of these effect buttons lit. Now you can play a song on your keyboard while singing and hear how the effects adjust musically as you play the different chords in your song. As each chord is recognized, the LCD display will briefly show "NP" meaning NaturalPlay.

The factory presets that have the word "Notes" in their names (presets #217-238) operate differently for both Harmony and Hardtune. These presets allow you to determine the pitch of the Harmony or Hardtune effects to the exact notes you play. The harmony notes will adapt to the octave of your playing where the Hardtune effect ignores it.

The maximum number of harmony notes that will sound can be 4 or 8 depending on which preset you load. This in turn is due to whether Harmony Doubling is activated in the HARMONY tab of the EDIT menu.

▶ MIDI performance tips

In chords without a clear third, VoiceLive Rack will assume a major chord, so when you play in a minor key, and as a general rule, you should always include a third when changing chords.

If you want to sing right at the beginning of your song, it's important to play a chord just before you sing

If you sing while playing a chord and then press the sustain pedal, you're able to add a keyboard embellishment that doesn't affect the harmony.

Your mod wheel can be used to add or remove vibrato in harmony presets.

Alternate Harmony and Hardtune Methods

This section is for those who do not play an instrument such as a MIDI keyboard or guitar. You are still able to experience VoiceLive Rack's Harmony and Hardtune effects with these methods:

- Using fixed Key and Scale
- Singing to music-only playback
- "Borrowing" from another player's instrument

▶ Using a fixed key (aka "Scale")

This is the main method for creating harmony used successfully in the original VoiceLive processor. It is also the main method for other Hard-

tune-type processing products.

Briefly, all of the chords in an entire song and your melody can belong to a single major or minor "Key". When the match of Key and song is correct, fixed key is harmony is nearly indistinguishable from recorded harmony. There are limitations however:

- Fixed Key harmony works for many, but not all songs.
- Fixed Key works best with 3rd harmony intervals; adding the 5th (interval: Higher) reduces the number of compatible songs.
- The terms "Key" and "Key and scale" can be used interchangeably.

You should be singing with musical backing and stay true to a A=440Hz reference. This could be a CD or other musicians. Choose a simple song to start with. Determine the Key of your song; this is often the first or last chord in a song without extensions. For example G Major is a valid Key, Gm7b5 is not.

To set key from the front panel:

Both harmony and Hardtune use the same key and this is set in the HARMONY edit tab.

1. Load a preset with Harmony active. A good one to start with is #3 CLOSE UP 3RD.
2. Hold the Harmony button.
3. Set the KEY and SCALE parameters on the top line* to the key of your song.

* If these parameters are not visible, the NaturalPlay algorithm in VoiceLive Rack has recognized input from either the AUX IN, GUITAR IN or MIDI inputs and has configured itself to derive guidance from that input.

In this case you can:

a) Cycle the power off and on and ensure no connections are made to the inputs noted above.

b) Set the GLOBAL NATURALPLAY parameter in the SYSTEM tab of the Setup menu to SCALE. This will disable the auto input sensing feature of NaturalPlay.

To set key using the Switch3 footswitch:

You can connect the optional Switch3 footswitch for direct access to Key setting during performance.

1. Connect the Switch3 to the PEDAL input.
2. Set any of the footswitches to SET KEY in the SWITCH3 tab of the Setup menu.
3. Load a harmony preset to sing through.
4. Tap the footswitch you assigned to Set Key in step 2.
5. Note the prompt in VoiceLive Rack's display and use the footswitches to input your key. The previous assignment of the 3 footswitches will temporarily be replaced by the key setting functions.
6. The key will become active immediately unless you press the Cancel footswitch.

If you have a guitar connected, this makes key setting with Switch3 even easier. Simply play a major or minor chord that you want to use as the key then tap the Set Key button on the footswitch. The chord you play will be recognized automatically.

Note that the Key you set is global so you can try other presets with your song without entering Key again. To configure presets so they can save different keys and scales, set the GLOBAL KEY/SCALE parameter in the SYSTEM tab of the Setup menu to OFF.

If you're lucky the first time, you'll be rewarded with musically appropriate Harmony and/or Hardtune effects musically following your whole chorus or song. If not, you can try the following:

- Try a different Key, perhaps a 5th away from your first choice.
- Choose a different Major or Minor alternate Scale.
- Choose a preset with only the 3rd (High) interval.
- Create a Step to change Key at the right moments with the Switch 3 footswitch or MIDI command.
- Move on to the next options listed.

Singing to Music Playback

VoiceLive Rack can derive musical information from fully mixed music tracks. For this alternative you'll need:

- Music source device. This could be an MP3 player, computer, CD player etc.
- Recorded music without vocals. This could be your latest CD tracks minus your vocals or Karaoke tracks available on the web.

Connect an MP3 Player or another audio source to the AUX input. When you power up VoiceLive Rack, it will auto-recognize the AUX input as the harmony music source. Choose a Harmony or Hardtune preset and play your music source. You should hear your music, voice and the effects in your PA system or headphones.

Use the volume control on your music source device to adjust the balance of music to vocals. You can also adjust the AUX level in the I/O tab of the Setup menu.

"Borrowing" from Another Player

If you sing with a guitarist or MIDI keyboard player, you can use their playing to guide the Harmony and Hardtune effects in your VoiceLive Rack.

Your guitarist can connect to the GUITAR IN and THRU then to their pedalboard or amp. Their guitar sound will remain the same and you can turn the effects on and off when you need them. The only limitation is the length of cable because high impedance signals lose signal over long cable runs. If this is an issue, you could use a preamp out or effects loop output from the amp.

Alternatively, you can run a MIDI cable from your keyboardist's controller to your VoiceLive Rack. This has no effect on the keyboard sound and cable runs are not a problem.

With either solution, you can coordinate with the player to make sure they are playing complete chords where you plan to use Harmony or Hardtune in a song.

Detailed Operation

Steps Overview

The Step feature allows you to create a series of up to 10 linked effect changes associated with a preset. In a preset that has steps, for example, tapping the right TAB/STEP button could toggle to another preset's effects, turn on all of the effects at once, increase the Delay level by 6 dB or all of the above.

Some factory presets e.g. #1 ANOTHER BRICK have been programmed with examples of steps. You can see that a preset has steps when the COUNT item in the HOME screen is a number greater than 1. When you see this, you can press the right TAB/STEP arrow to cycle forward through the pre-programmed effect changes. To cycle backward from steps 2-10, you can press the left TAB/STEP arrow.

To Program Your Own Steps

1. Select a preset as the desired starting effect in your chain.
2. Hold the right TAB/STEP arrow for a moment to enter Step programming mode. Segments of the main display will reverse color.
3. To insert another preset's effect as the next step, use the PRESET buttons to locate the desired preset.
4. If you want to change which effect blocks are on, press the desired effect buttons.
5. If you want to make an edit, press the EDIT button and make your changes. Edits made in Step insert mode before accepting are stored automatically to the new step.
6. Tap the right TAB/STEP arrow to accept your new step and exit Step programming mode. The COUNT legend in the main display will increment by one.

Next time you load the preset, it will have the "alternate personality" you can access quickly with the TAB/STEP arrow buttons.

To delete a single step,

1. Use the TAB/STEP buttons to locate the Step you want to delete.
2. Tap the left TAB/STEP arrow to delete the current step. This will perform the deletion and present the Home screen.

To speed Step programming, all insertions and deletions are automatically stored when you exit Step mode. If you want to experiment without affecting an important Step chain, you can either store the preset to another location first (Steps are stored with presets) and work there or perform a backup before experimenting and restore when done.

In addition to the front panel TAB/STEP buttons, the optional Switch3 footswitch can be programmed to give you access to the steps in presets that have them.

To cancel and exit Step programming mode, hold STEP.

Detailed Operation

External Control Overview

VoiceLive Rack can be controlled by three external sources:

- TC-Helicon MP-75 mic
- TC-Helicon Switch3 footswitch
- MIDI received at the MIDI IN jack or via USB

These abilities provide remote control convenience for the singer or the live sound tech.

The MP-75 Mic Switch

At TC-Helicon, we strive to put more power in the hands of singers and this innovative microphone is the evolution of that quest.

The elastomer switch on the MP-75 mic can be used by the singer to trigger effects on cue, activate looping and more. For a complete list of mic switch targets and for more information on the Mic-Control feature see:

- The Edit Menu: Mic-control tab to set a unique assignment per preset.
- The Setup Menu: Mic-control to set a single global assignment.

Generally, global Mic-Control assignment is best because it is easiest to remember.

To use Mic-control with an MP-75 mic:

1. Connect an XLR cable between the MP-75 mic and VoiceLive Rack's MIC input.
2. Enable phantom power via either:
- Setting the PHANTOM control in the I/O tab of the Setup menu to ON or;
- Setting the CONTROL parameter in the MIC-CONTROL tab of the Setup menu to ON.
3. Press Home

Now you can browse through the presets while singing and pressing the button on the mic. The display will show the factory setting of the MIC-CONTROL target in each preset.

The Switch3 Footswitch

Switch3 is an optional 3 button footswitch that can be used onstage by a performer or by a live sound tech at the mixing console. The control options include preset up and down, engaging individual effects blocks and Bypass among others.

For a complete list of Switch3 targets and for more information on Switch3 see:

- The Edit Menu: SWITCH3 tab to set unique assignments per preset.
- The Setup Menu: SWITCH3 Tab to set global assignments.

To control VoiceLive Rack from a Switch3 footswitch:

1. Connect the TRS cable that came with your Switch3 between the footswitch and VoiceLive Rack's PEDAL input.
2. Press either of the footswitches and see it change presets and activate Bypass. These are the default assignments. If this is the desired operation there is no further setup required.

To change global control assignments for the Switch3:

1. Locate the SWITCH3 tab in the Setup menu to browse and adjust the footswitch functions.
2. Press Home to exit. The settings are automatically stored.
3. Press the footswitches to confirm their correct operation.

To change Switch3 assignment to individual preset control:

1. Set the GLOBAL parameter in the SWITCH3 tab of the Setup menu to OFF.
2. Press Edit and locate the SWITCH3 tab.
3. Adjust the functions as desired.
4. Press Store twice to save your new assignments to the current preset.
5. Press Home to exit then press the footswitch buttons to confirm correct operation.

MIDI Remote Control

MIDI commands can be very useful if you want to automate certain tasks. This can be as simple as sending a preset change command from a MIDI keyboard or as extensive as sending a series of MIDI commands on cue from an audio/MIDI application in a computer.

To use MIDI commands to control VoiceLive Rack:

1. Connect a MIDI cable from the MIDI out of the device transmitting commands to VoiceLive Rack's MIDI IN jack or connect them via a USB cable.
2. Set the MIDI channel of the transmitting device to 1. If it uses another channel, set VoiceLive Rack's CHANNEL and CC CHAN parameters in the MIDI tab of the Setup menu to match the channel of the transmitting device.
3. Send a MIDI message such as a preset change message to VoiceLive Rack to confirm MIDI reception is working. If successful, the word "MIDI" will show briefly in the display with each message sent.
5. Program your transmitting MIDI controller or sequencer application to send any further messages to VoiceLive Rack.

See The Setup Menu: MIDI Tab and the MIDI Implementation chart for complete details on VoiceLive Rack's MIDI parameters and individual controller messages respectively.

Detailed Operation

The USB Computer Connection

The USB port on the rear panel of VoiceLive Rack offers a digital connection between it and a computer. This offers the following benefits:

- Audio input and output for recording, processing and monitoring without a separate audio I/O box
- MIDI connection from your computer to VoiceLive Rack without an external MIDI interface.

And more via the VoiceSupport application:

- Easy backup and restore of preset and system settings
- Simplified system updates
- Information and tutorial videos

The VoiceSupport Application

This is a web-enabled application intended to enhance your experience with VoiceLive Rack. As well as keeping you up-to-date with the latest TC-Helicon news items and support materials, VoiceSupport simplifies system updates, preset backups and product registration.

We recommend you install VoiceSupport, check to see if any new firmware updates are available and if they are, to download them to your unit.

To install VoiceSupport on a PC or Mac:

1. Point your browser to

www.tc-helicon.com/products/voicesupport/

2. Click on the download link for the computer type you have.
3. Follow the prompts to install VoiceSupport on your computer.

There is an online manual available on the download page or from within the application.

The first time you open VoiceSupport it may take a while to load as it must download all of the newest content.

When the application finishes loading it should display "VoiceLive Rack" in the top right corner and a connection icon, indicating that connected was successful. If it says "Not Connected", check that the USB cable is properly attached and then click the blue connection button. For further troubleshooting check the following link:

FAQ Knowledge Base

VoiceLive Rack and Digital Audio

Here are a few common methods of using VoiceLive Rack with a USB-connected computer and an audio application (DAW):

- Capturing a full mix of your performance
- Processing vocals from your DAW
- Recording dry vocal and guitar tracks

We assume you are familiar with configuring your audio application for input and output. You can use VoiceLive Rack's headphones out or a mixer and speakers for monitoring.

To capture a full mix of your vocal performance:

1. Connect VoiceLive Rack to your computer via USB.
2. Assign VoiceLive Rack as the audio input and output device in your audio application.
3. Connect your mic and headphones or mixer to VoiceLive Rack and pick a preset you like.
4. Confirm that VoiceLive Rack's default I/O tab parameters are set as such:

   DIGITAL IN: USB: STEREO

   DIGITAL OUT: FULL MIX

Detailed Operation

You're now ready to record your new fully-processed vocal track. Playback will be heard through VoiceLive Rack's outputs.

Processing recorded vocals:

You can send a dry vocal track to VoiceLive Rack for effect processing then record a new processed vocal track in your audio application via USB. In order to simultaneously monitor other stereo audio program, you will need an additional computer I/O device.

1. Follow steps 1 and 2 in the previous procedure.
2. Set VoiceLive Rack's I/O tab parameters as such:

   DIGITAL IN: USB: VOX L / INST R

   DIGITAL OUT: FULL MIX
3. Configure your DAW to send the dry vocal track to VoiceLive Rack's left digital input and an instrument track to the right digital input if required for Harmony or Hardtune effects.
4. Refine your VoiceLive effects and mix, then record the new audio track with processed vocals.

When playing back using VoiceLive Rack as the main output audio device, you'll need to set the DIGITAL IN back to USB: STEREO. If you have an additional I/O device, this step is unnecessary.

If you plan to use the original dry track in the final mix with effects provided by VoiceLive Rack, turn the LEAD MUTE parameter in the I/O tab to ON.

Recording dry vocal and guitar tracks:

With this option, you can monitor a fully processed mix of wet guitar and vocal while recording yet record only dry versions of these inputs for more processing options later.

1. Connect your mic and a guitar to VoiceLive Rack and either monitor through the headphone out or analog outputs to a mixer.
2. Set VoiceLive Rack's I/O tab parameters as such:

   DIGITAL IN: USB: FULL MIX

   DIGITAL OUT: VOCAL & GUITAR
3. Set the vocal and guitar effects so you have an interesting sound in your monitors/headphones while keeping in mind these effects will not be recorded.
4. Record two new tracks in your DAW: the dry vocal and the dry guitar.

To process these tracks refer to the previous description "Processing recorded vocals".

Digital Input Notes:

When DIGITAL IN is set to:

- USB: VOX L / INST R or
- SPDIF: VOX L / INST R

...the MIC and GUITAR IN are disabled and no sound will be heard from these inputs.

When DIGITAL IN is set to USB (or SPDIF): STEREO, harmonies will follow the stereo audio coming from the selected digital input on presets where NATURALPLAY is set to AUX INPUT.

Digital Output Notes:

USB audio output will not function when either of the SPDIF: STEREO or SPDIF: VOX L /INST R options is chosen for the DIGITAL IN parameter.

SPDIF digital *output* is always available regardless of DIGITAL IN or OUT settings.

Detailed Operation

Audio Device Name

In the Mac and Windows operating systems, and with most audio apps you can select VoiceLive Rack's audio device by name. In some Windows XP DAW apps, however, the name of the audio device may be "Analog Connector (*n)* VoiceLive Rack" or "USB Audio Device".

USB and MIDI Control

To use VoiceLive Rack's MIDI IN jack for harmony, preset change or realtime control *while USB is connected*, enter the I/O tab in the SETUP menu and set USB CONTROL to OFF.

USB audio will function normally but MIDI will only be accepted through VoiceLive Rack's MIDI IN jack and not via USB.

To re-enable VoiceSupport's features and reception of MIDI from your DAW, turn USB CONTROL to ON.

The Input Gain Button

Overview

Trimming the input level entering VoiceLive Rack's analog to digital converter is essential for preventing unwanted distortion and minimizing noise. This convenient front panel button offers quick access to this parameter, phantom power on/off and higher resolution metering.

- Input level is a digitally-controlled analog circuit which is useful for recall using the Setup Profiles feature.
- Input gain is adjusted for the Mic or Line input jacks only. No input level trimming is offered when the USB or S/PDIF Digital inputs are set to VOX L / INST R.
- Using standard audio caution, mute the channel receiving input from VoiceLive Rack when adjusting input level.

Manual Gain Adjustment

To set input gain manually:

1. Touch the Bypass button so it flashes.
2. Touch the Input Gain button.
3. Sing or start playback while watching the IN meter in the display.
4. Adjust the IN GAIN setting with the knob below the onscreen parameter until no CLIP message occurs.
5. Touch Home to exit Input Gain setup.

Automatic Gain Adjustment

VoiceLive Rack has an accurate auto-adjust feature that samples the input and sets the optimum level with approximately 4 dB of headroom.

You can exit the auto-input feature at any time by pressing Home.

To set input gain automatically:

1. Touch the Bypass button so it flashes.
2. *Hold* the Input Gain button until the SING YOUR LOUDEST prompt is visible in the display.
3. Sing or start playback for approximately 5 seconds. The audio output will be muted.
4. The GAIN CHANGE amount will be shown in dB at the end of the sampling period. If you're satisfied with the level adjustment, tap the Input Gain button to unmute the outputs and return to the previous display menu.

- The test period will not begin until input is detected. If none is detected, a timeout will revert the display to the previous display menu.

The Wizard Button

Overview

The Wizard allows you to:

- Search for appropriate presets for your application by criteria or "tags".
- Sort presets by number or alphabetical listing.
- Pre-load a new preset while another is active in order to execute the load on cue.

▶ The FIND tab

The FIND tab allows browsing of presets based on their tags or how they are sorted.

To browse and load presets with the Wizard:

1. Tap the Wizard button and tab to the FIND tab if it is not already loaded.
2. Turn the Data Wheel to browse forward and back through the list of presets.
3. Press the Wizard button to load the highlighted preset.

To filter the preset list via criteria:

1. In the FIND tab, turn the knob under SORT so it shows ALPHABETIC. This will re-arrange the displayed preset list starting with symbols, then numbers 0-9, then A-Z. None of the Factory preset names begin with a symbol, e.g. the "&" symbol, so the first presets listed will start with numbers.
2. Turn the knob under the first CHOOSE TAG parameter to any value. You will see the list update as this filter is applied.
3. You can then change the next two tags if you want. Note that you will see progressively fewer results as you use more tags. Also, you may not see any results with certain tag combinations.
4. Highlight a preset name with the Data Wheel.
5. Press the Wizard button to load the preset.
6. Press Home to exit or remain in the Wizard menu to load browse and load further presets.

The TAG list contains:

HARMONY ABOVE

HARMONY BELOW

HARMONY ABV+BEL

HARMONY NOTES

CHOIR

OCTAVES

DOUBLE

BIG VOCALS

AMBIENCE LONG

AMBIENCE SHORT

TAP DELAY

MODULATION

WET

DRY

HARDTUNE

MEGAPHONE

DISTORTION

EXTREME

CHARACTER

CORRECT

SIMPLE

COVERS

NO HARMONY

USER

The Wizard Button

▶ The TAG tab

This tab allows you to assign or remove the assignment of tag criteria for each preset. The Factory presets have been assigned tags but you can change them as you like for easier browsing in the Wizard. This feature is most useful when creating your own custom presets because as you build up a large quantity of presets over time, the Wizard can help you to find them again.

To manage preset tags:

1. Load the preset you want to change tags for.
2. If you're not already at the TAG tab, press the Wizard button and tab over to it.
3. Use either the Data Wheel or the knob under the SELECT TAG parameter to move through the available tags. The tags that are assigned for the current preset are shown with an X in the box beside the tag name.
4. Use the ON > < OFF knob to remove or add tag assignments. You can assign as many or as few as you want. Note that too many tags reduces the value of the tag feature and zero tags will not show the current preset when a tag is applied.
5. Press the Store button twice to store the new assignment. This will store the preset and return you to the TAG tab.
6. Press Home to exit.

The Setup Button

Overview

The Setup menu brings together all of the global configuration settings. Changes made in these tabs are automatically stored for the next power up session. If you want to store and recall different configurations, see the STORE menu descriptions.

Resetting Setup (Initializing)

If you want to put all Setup parameters back to their original factory settings, consult *Performing a global reset* in the Basic Operation section.

The Setup Button

The I/O Tab

▶ IN GAIN

Sets and displays the MIC / LINE input level. Both inputs share the same gain settings and are not meant to be used simultaneously; switching from a Mic to a Line level signal will likely require resetting IN GAIN. To set input level automatically, use the AUTO MIC-GAIN function by holding the Input Gain button and following the prompts. When any digital input is selected (USB or SPDIF) the IN GAIN does not control the digital input level. Use your transmitting device to adjust level.

▶ PHANTOM

Turns 48V phantom power on and off for use with condenser microphones.

▶ AUX LEVEL

Set the input level of for the Aux input.

▶ OUTPUT

The configures the outputs to be STEREO (default), MONO or DUAL MONO. The STEREO option outputs discrete Left and Right audio material when connected to a stereo monitor or PA system.

In MONO mode, the Left output is the summed mono mix of VoiceLive Rack including effects. The Right output is dry with only Tone applied to the MIC or LINE input signal. This is useful when a live sound engineer wants to control the balance of wet/dry mix at the mix position. In this case, set LEAD MUTE to ON.

In DUAL MONO mode, the effected vocal comes from the left output and effected guitar is produced from the right output. This allows you to have a sound tech control the level balance between wet vocal (vocal with harmonies and effects) and wet guitar.

▶ DIGITAL IN

Selects between SPDIF and USB physical inputs as the input and also specifies where the incoming digital signal is routed. By default the routing is USB: STEREO, where the digital input is routed to the same path as the AUX input, but is not passed on to the digital output.

When set to USB: VOX L / INST R, or S/PDIF: VOX L / INST R the digital input replaces the analog MIC/LINE and GUITAR inputs and the MIC and GUITAR IN connections are disabled.

Sample rate is synchronized automatically to the incoming digital audio stream. There is no sample rate adjustment in VoiceLive Rack. When processing an analog input such as the MIC and sending to VoiceLive Rack's digital out, sending a short bit of audio from your recording application to either Digital input will set the sample rate.

When DIGITAL IN is set to USB (or SPDIF): STEREO, harmonies will follow the stereo audio coming from the selected digital input on presets where NATURALPLAY is set to AUX INPUT.

While the VoiceLive Rack is connected via USB to your computer, other applications such as your browser may not make sound through your regular sound card. In this case, disconnect VoiceLive Rack's USB cable.

▶ DIGITAL OUT

Configures the digital output between the stereo mix of VoiceLive Rack (FULL MIX), and separated, dry outputs used for recording (VOCAL & GUITAR).

▶ LEAD MUTE

Turns the lead voice off in all presets. This is useful in the live sound engineer setting described above

or when VoiceLive Rack is being fed by an aux send from a mixer channel where the lead level is mixed in at the mixing console.

▶ LEAD DLY

When set to NONE (default), the lead voice is sent through VoiceLive Rack with the shortest possible latency inherent to the system. When set to VOICE SYNC, the lead voice is delayed slightly to synchronize with the processing latency of the harmony voices.

▶ OUTPUT LEVEL RANGE

Configures the maximum stereo analog output (XLR, ¼" and headphone) level. Set this value to MIC or LINE when connecting to mic or line level inputs on a mixer respectively. This will minimize distortion and noise.

The +6 and +12 options raise the respective output levels by reducing internal headroom. If you hear distortion on singing peaks when otherwise connected correctly (MIC level output to a mic input, LINE to a line input), use a lower level output option.

Note that the LINE +12 option is the highest output level and it is effective for increasing headphone output level in loud environments.

▶ GUITAR MUTE

Mutes the guitar signal in the main outputs when no jack is connected to the GUITAR THRU jack. This allows the guitar dry signal to be mixed externally. The guitar signal still feeds the NATURALPLAY harmonies and tuner.

▶ PAN

Sets the stereo position of the dry guitar signal.

▶ MIC/LINE PHASE

Selects between NORMAL and INVERTED to help reduce feedback in live performance. This feature is intended to work with low and low mid frequency feedback tones. The mic must be in a stationary position in relation to the monitor.

The Setup Button

The MIDI Tab

▶ CHANNEL

Sets the MIDI channel that VoiceLive Rack uses for preset change and MIDI harmony control. When a NATURALPLAY preset is set to MIDI NOTES 4 CH, the channel selected is the channel used for VOICE 1. The MIDI channel for VOICE 2 is the selected MIDI channel + 1, VOICE 3 is +2, VOICE 3 is plus 3.

▶ FILTER

Allows MIDI Program Change or System Exclusive messages to be ignored for convenience.

▶ CC CHAN

Sets a separate MIDI channel for CC control if desired.

▶ TRANSPOSE

This transposes the harmony voices in MIDI NOTES mode to allow it to be controlled by upper or lower sections of a MIDI keyboard if required. The value corresponds to octaves.

▶ SPLITDIR

(Split Direction) Sets whether MIDI notes ABOVE or BELOW the split point are used to control MIDI NOTES presets only.

▶ SPLITNOTE

Sets the MIDI note above or below which the keyboard split will be active.

▶ SYSEXID

(MIDI System Exclusive ID number) When addressing multiple VoiceLive Rack units on the same MIDI In/Thru chain with a Sysex editor, each one should have its own ID or they all will be edited in the same way.

▶ VIBBOOST

Specifies how the Mod Wheel message affects vibrato if it is enabled in a preset. The Boost setting (default) will add more vibrato once the part of the wheel movement reaches the corresponding amount of vibrato and then returns to the original amount at rest position. The Manual setting allows full range control of vibrato once the wheel is moved. To restore the factory vibrato amount, recall the preset.

▶ PBRANGE

(Pitchbend Range) Sets the range in semitones that MIDI pitch bend information will alter voice pitch shifts.

The Setup Button

The SYSTEM Tab

▶ LCD CONTRAST

Sets the contrast level of the LCD display. Useful for better viewing at different angles and light conditions.

▶ USB CONTROL

Setting this parameter ON should only be done when USB is connected. When this is ON, the MIDI in and out connectors are disabled and instead, MIDI is routed in and out via the USB connector only. When USB CONTROL is set to OFF, MIDI is disabled over USB and instead, the MIDI in and out connectors function for MIDI.

▶ GLOBAL NATURALPLAY

When this parameter is enabled it forces all harmony to a predefined NATURALPLAY mode for all presets. This is for use when multiple inputs are used simultaneously yet only one is to be accepted for harmony control. The default for this parameter is OFF.

▶ GLOBAL KEY/SCALE

When this parameter is ON (default), the Key and Scale set for a NATURALPLAY SCALE preset affects all presets. This allows you to browse SCALE presets without having to change Key every time. In this mode, Key and Scale settings are not saved with a STORE action. When set to OFF, key and scale is configurable per preset.

▶ GLOBAL TAP TEMPO

When set to ON, all presets with Delay SOURCE set to TAP will share the same tempo. When set to OFF (default), the preset's tempo is recalled with a preset but can be changed via TAP.

▶ TUNEREF

This trims the overall tuning reference for Harmony and Hardtune with respect to A-440 Hz. This is used when an accompanying instrument has changed overall pitch such as a piano that is in tune with itself but not with A=440.

The Setup Button

GUITAR Tab Overview

This tab offers control of a suite of processing effects for the guitar input. These effects are only applicable when the guitar is mixed through the signal path of VoiceLive Rack and not externally via the GUITAR THRU jack and on to an amplifier. Thus; ensure that no jack is inserted into the GUITAR THRU jack when you want to hear and adjust these parameters.

FX

Master on/off control for all effects in this tab.

PHASE

Phase reverse can help to minimize low and low-mid frequency feedback on acoustic guitars with loud monitoring. The effectiveness of phase reversal depends on your guitar's physical location in relation to the monitor. If you move around the stage, reversal may not help, but if you typically remain in the same position it can help considerably.

To see if phase reversal will help, stand where you will perform in relation to your monitor and carefully turn up the level of your guitar with your guitar's onboard volume control until it starts to feed back. Note the volume if the control has an indication then turn down the volume and adjust the phase reverse control in VoiceLive Rack. Return to standing position and adjust your guitar volume to the level that caused the feedback. If this didn't work, guitar monitor level or overall (guitar and vocal effects) will have to be reduced.

▶ REVERB STYLE

The Reverb processor accurately simulates acoustic spaces around your guitar. This is an entirely separate processor from the one used for the vocal processing. It does, however, offer the same style selection but with no Style editing.

There are 30 styles to choose from covering everything from tight ambience to giant arenas. The factory default style is called SMOOTH PLATE.

▶ REVERB LEVEL

Turn the Mix/Edit knob below this parameter to raise and lower the amount of Reverb on your guitar from the factory default of -30 dB.

▶ UMOD STYLE

Scroll down to this row and use the Mix/Edit knob to change µMod (Micromod) style for the guitar. As with Reverb, this effect processor is entirely separate from the vocal µMod processor while offering the same style selection. No µMod style editing is possible for guitar.

The factory default style, MICROMOD CLONE offers a gentle stereo detune effect.

▶ UMOD LEVEL

Turn the Mix/Edit knob below this parameter to raise or lower the amount of µMod effect on your guitar. The factory default mix level is -12 dB.

Use the Navigate arrows to tab over to the EQ tab from the GUITAR tab. Here you will find a 3 band EQ featuring:

- Low band shelving
- All band fully parametric peak/dip control
- High band shelving

The two "Shelving" EQs boost or cut all frequencies below or above the frequencies set by the EQ LOW FREQ and EQ HIGH FREQ controls respectively. These are most like the common Bass and Treble controls on a stereo system.

The "Parametric" EQ boosts or cuts the frequencies within a selected band that is defined by a center frequency (EQ PARA FREQ) and a width control (EQ PARA WIDTH). Usually, the gain of a narrow parametric band is typically reduced to

The Setup Button

overcome room or undesirable guitar resonances. This smooths the sound and can help overcome guitar feedback.

The 3 GAIN controls allow +/- 12 dB of adjustment. The 3 FREQ controls range from 20 Hz to 20 kHz.

▶ EQ LOW GAIN

Boosts or cuts the range of frequencies below the frequency set by the EQ LOW FREQ control.

▶ EQ LOW FREQ(uency)

Allows you to define the frequency range for the low shelf by choosing the highest frequency below which boosting or cutting is possible.

▶ EQ HIGH GAIN

Boosts or cuts the range of frequencies above the frequency set by the EQ LOW FREQ control.

▶ EQ HIGH FREQ

Defines the frequency range for the high shelf with the selection of the lowest frequency above which boosting or cutting is possible.

▶ EQ PARA GAIN

Boosts or cuts the band of frequencies centered at the setting of the EQ PARA FREQ control and its associated EQ PARA WIDTH.

▶ EQ PARA FREQ

Defines the center of the parametric band.

▶ EQ PARA WIDTH

Defines how narrow or wide the parametric band is to be. The ends of the control range are labelled "NARROW" and "WIDE" to add meaning to the numbers in the middle of the control range.

▶ COMPRESSION THRESH(old)

The THRESHOLD and RATIO controls work together to offer simple audio compression of the guitar signal. The default settings offer very gentle compression of peaks.

The COMPRESSION THRESHOLD control sets the level at and above which the amount of gain reduction (compression) specified by the COMPRESSION RATIO control will occur. The range is 0 dB (not compressing any peaks) to -60 dB (compressing everything you play) with the default being -6 dB.

▶ COMPRESSION RATIO

This sets how much gain reduction you want when your guitar level goes above the threshold. The range is from 1:1 (no gain reduction) to 64:1 (complete flattening of peaks - also known as limiting). The number on the left side of the : (colon) symbol is how loud your guitar has to be in order to achieve a 1 dB gain increase. The default setting is 1.8:1.

Note that the RATIO control has to be set above 1.0 (1.0:1) to apply any compression regardless of the setting of the THRESHOLD.

Also note that automatic makeup gain occurs depending on your combination of THRESHOLD and RATIO. A side effect of compression is that it can reduce apparent level until makeup gain is applied to raise the overall level.

The Setup Button

REVERB Tab Overview

This tab allows you to configure a global Reverb style that does not change as you change presets. This can be useful when you want to, for example, change from one Harmony preset to another for a different interval arrangement yet you prefer the base Reverb effect to remain.

▶ GLOBAL REVERB ENABLE

This is the master on/off for global Reverb. When set to OFF, this is the only parameter visible in the tab. When turned ON, the full range of Reverb control parameters becomes visible.

When global Reverb is active, tapping the front panel Reverb button will turn this effect on or off globally. As such, reverb will remain on or off respectively as you load different presets. A pop-up will appear in the display briefly showing global Reverb on or off status.

Holding the Reverb button to edit while global Reverb is active will present the global REVERB tab from the Setup menu and light the Setup button.

▶ STYLE

Use the soft knob assigned to this parameter to choose a pre-programmed reverb style you like.

▶ LEVEL

Sets the mix level for the Reverb effect.

▶ WIDTH

Sets the stereo imaging of the Reverb effect. 0% is mono, 100% is fully stereo.

▶ DECAY

Sets the length of the reverb tail from 10mS to 20 seconds. Note that, due to the complex nature of Reverb algorithms, a decay time of 4 seconds may sound quiet different from one style to the next, even when the rest of the settings are identical.

▶ LO COLOR / HI COLOR

These are preset-frequency filters inserted into the Reverb feedback path that tailor the low and high frequency response and decay of the tails. Values toward -50 will cut response in its respective band and a values toward 50 increase response.

▶ HI FACTOR

This allows you to raise or lower the level of the high band of the Reverb tail independently.

▶ EARLY REFLECTIONS / TAIL LEVEL

These parameters allow you to attain the right balance between reflections you would hear from close surfaces (EARLY REFLECTIONS) with those from surfaces further away (TAIL LEVEL). The settings for the early reflections in each style are slightly different but non-editable.

▶ DUCKING

When DUCKING is set to ON, the Reverb block's output will be reduced while you are singing. At the end of a sung phrase, the effects return to the level you set, increasing the clarity of your vocals while still sounding very "wet". The amount of attenuation and attack time for ducking are set with the DUCKING AMOUNT and DUCKING TIME parameters further down in this menu.

▶ DIFFUSE

Also known as Diffusion, this is a very subtle parameter used to simulate and control the density of the reflections inherent in real acoustic spaces. Low DIFFUSE values (-25 to 0) are intended to

introduce more discrete echo-like motion to the tail where high values (0 to 25) make the tail smoother-sounding.

▶ PRE DLY

Pre Delay introduces a short (up to 100 ms) delay between the dry audio signal and the onset of reverb to help simulate larger spaces and to provide audio separation between the dry signal and the reverb effect.

▶ SPEED

This controls the rate of pitch modulation set by the DEPTH parameter. This modulation adds complexity and slight chorusing between the reverb tail and the input voice. The values range from -25 to 25.

▶ DEPTH

This controls the amount of pitch modulation applied to the reverb tail. The values range from -25 to 25.

▶ DUCKING AMOUNT

This sets how much attenuation (gain reduction) is applied to the reverb signal when a vocal is present. For ducking to not be too obvious, a slight reduction of -6 is best. The DUCKING parameter must be set to ON for this to have any effect.

▶ DUCKING TIME

Ducking time sets how long it takes to ramp up the reverb level at the end of vocal phrases.

▶ LEAD to REV

Sets the amount of lead level sent into the Reverb block. This and the remaining send and Lead Level parameters are not stored as part of the styles.

▶ HARM to REV

Sets the amount of harmony level sent into the Reverb block. Harmonies must be on to feed this send.

▶ DEL to REV

This allows you to feed the reverb block with the effected output of the delay block. The DELAY effect button must be on to feed this send.

▶ LEAD LEVEL

Controls the lead (dry + Tone) voice level when the individual effect is turned on with its respective footswitch. This allows a unique wet/dry mix for individual effects. When multiple effects are active, the lowest LEAD LEVEL value will determine the value.

Note that the LEAD EFFECT SENDS parameter on the PRESET tab must be set to PRE in order for any signal to get to the effect block when LEAD LEVEL is set to OFF.

The Setup Button

MIC-CONTROL Tab Overview

This tab allows Mic-Control from a TC-Helicon MP-75 mic to assigned globally. You can assign a single parameter such as Tempo for example to the mic switch and this will not change over different presets. The settings in this global MIC-CONTROL menu are almost identical to the one used in the preset Edit menu except that GLOBAL MIC-CONTROL replaces the FUNCTION parameter.

▶ CONTROL

When turned to ON, this enables effect control from the mic. The front panel Mic-Control button can similarly be used when the MIC-CONTROL setting is set to COPY MIC SWITCH.

Note that this will also turn on phantom power in VoiceLive Rack if it is not already active. To avoid unexpected audio pops, mute your mixer first. Setting CONTROL to OFF does not deactivate phantom power.

▶ GLOBAL MIC-CONTROL

When set to OFF, this reverts the Mic-Control target to whatever is assigned in the individual presets. The target list is the same as when global Mic-Control is off except for the addition of the OFF setting.

- OFF
- HARMONY MOMENT
- DELAY MOMENT
- HARDTUNE MOMENT
- TRANS MOMENT
- REVERB MOMENT
- UMOD MOMENT
- DOUBLE MOMENT
- RHYTHMIC MOMENT
- HARMONY
- DELAY
- HARDTUNE
- TRANS
- REVERB
- UMOD
- DOUBLE
- RHYTHMIC
- HARMONY HOLD*
- TEMPO
- CHOIR
- PITCH
- BYPASS

The MOMENT functions will only activate the effect while the button is held. All other functions will remain on or off after tapping the Mic-Control button.

* Harmony Hold is a feature that sustains the last harmony syllable indefinitely as you hold the Mic-Control button.

▶ MIC-CONTROL button

This setting affects the function of the front panel MIC-CONTROL button. This button can be configured to mimic the response of the MP-75 thumb switch or to directly access the MIC-CONTROL editing tab.

Setting this to COPY MIC SWITCH allows a quick check of the MIC-CONTROL function as you will see the target assignment's button light e.g. Harmony. When set to HOLD TO EDIT, holding the MIC-CONTROL front panel button will display the appropriate edit tab in the display.

The Setup Button

SWITCH3 Tab Overview

This edit tab allows you to *globally* set the target for each of the 3 switches on the TC-Helicon Switch3 footswitch.

▶ SWITCH 1 FUNCTION

- OFF
- BYPASS
- STEP UP
- STEP DOWN
- PRESET UP
- PRESET DOWN
- HARMONY
- DELAY
- HARDTUNE
- TRANSDUCER
- REVERB
- UMOD
- DOUBLE
- RHYTHMIC
- HARMONY HOLD*
- CHOIR
- PITCH
- GUITAR FX
- SET KEY

▶ SWITCH 2 FUNCTION

Same as above.

▶ SWITCH 3 FUNCTION

Same as above.

* Harmony Hold is a feature that sustains the last harmony syllable indefinitely as you hold the Mic-Control button.

▶ GLOBAL

Turns global assignment of the footswitches on or off. When it's set to ON, the footswitches will control the same three targets regardless of which preset is loaded. When set to OFF, each preset can have its own assignments. Global assignment of the SWITCH3 target is best used when controlling PRESET UP/DOWN, STEP UP/DOWN and BYPASS.

The Store Button

STORE Tab Overview

This menu gives you the ability to name and save preset edits for use later.

To store edited presets:

1. Edit a preset
2. Press the Store button

If you don't want to change the name of the preset, press Store again then Home. This completes the Store operation. If you want to change the preset name continue:

3. Use the CURSOR, LETTER knobs etc to change the name of your preset. The name can contain up to 15 characters.
4. Turn the STORE TO knob if you want to store to a new location. Blank presets are shown by the name EMPTY SLOT.
5. Press Store to complete the operation.
6. Press Home.

To cancel an incomplete Store operation from within the Store tab, press Home or Edit.

▶ CURSOR

Turning the knob below this parameter cycles left and right through the name shown in the display.

▶ LETTER

Chooses between:

- Numbers (0-9)
- Characters (+ - = / ' ! ? & % [space])
- Capital letters (A-Z)

Turning the knob left or right will present the previous or next letter in the list respectively.

▶ INS > < DEL

Turning the knob to the left deletes the character at the current cursor position.

Turning to the right inserts a blank space at the current cursor position.

▶ STORE TO

This allows you to store your preset edit at any of the 400 preset locations in VoiceLive Rack. As you turn the knob you will see the name of the preset stored at the current number and when you stop, the name of your new preset will replace it.

All of the presets can be overwritten by new ones if desired. When stored at a location formerly occupied by an un-edited Factory preset, the new preset becomes a User preset. See the MANAGE PRESET tab description following for details on how to restore deleted or overwritten presets.

Note: Unlike other menus where the previously-used tab appears when exiting and then re-entering the menu, the Store menu always presents the STORE PRESET tab regardless of whether other another tab in the Store menu had been used previously.

The Store Button

MANAGE PRESET Tab

This tab contains various preset filing options.

▶ SEND PRESET TO MIDI SYSEX

This parameter provides an alternative to the VoiceSupport application for offloading individual presets for backup. "MIDI SYSEX" is an abbreviation of MIDI System Exclusive which is the digital format used to transmit presets.

To use this feature, you must be connected to a computer running a MIDI librarian program or to a hardware MIDI sequencer. Connection can be made via USB or by the physical MIDI OUT jack on the back panel of VoiceLive Rack. When connecting with a computer via a USB cable ensure that the USB CONTROL parameter in the SYSTEM tab of the Setup menu is set to ON. When using the a MIDI cable connected to the physical MIDI OUT jack, ensure the USB CONTROL parameter is set to OFF.

To send a preset via MIDI Sysex:

1. Highlight the row containing the SEND PRESET... parameter.
2. Locate the desired preset number using the leftmost knob. USER and FACTORY presets are shown as such, blank presets are shown by a number: #*nnn.*
3. Press the flashing Store button to transmit the preset. A pop-up will display the result.
4. Choose another preset or press Home to exit.

▶ ERASE USER PRESET

This parameter allows you to restore a user-edited preset to its factory settings. This action is not undo-able so backup your user presets if you want to keep them.

To erase a user preset:

1. Highlight the row containing the ERASE... parameter.
2. Choose a preset to erase with the leftmost knob. Note that only presets shown as USER are erase-able.
3. Set the CONFIRM setting to YES with the rightmost knob.
4. Press the Store button to complete the action. A pop-up will show status.

▶ CLEAN PRESET BANK

This function will periodically run automatically on VoiceLive Rack when a large number of preset stores have been executed. To avoid this optimization sequence happening during performance, scroll to this item and press STORE to run the optimization routine. It takes approximately 2 minutes.

The Store Button

STORE SETUP Overview

In this tab you can name and store setup profiles. A profile is a collection of all Setup menu parameters that can be recalled. This is convenient when VoiceLive Rack is regularly used with different singers, mics, PA systems etc. You are able to store and recall up to 10 profiles.

Using this menu is identical to the STORE PRESET menu except for the fact that there are 10 profile locations as opposed to 400 preset locations.

To store a setup profile:

1. Make changes to any Setup menu parameters.
2. Press the Store button and tab over to the STORE SETUP tab.
3. Use the CURSOR, LETTER knobs etc to change the name of your profile. The name can contain up to 15 characters.
4. Turn the STORE TO knob if you want to store to a new location. Blank presets are shown by the name EMPTY.
5. Press Store to complete the operation.
6. Press Home.

To cancel an incomplete Store Setup operation from within the Store tab, press Home or Edit.

▶ CURSOR

Turning the knob below this parameter cycles left and right through the name shown in the display.

▶ LETTER

Chooses between:

- Numbers (0-9)
- Characters (+ - = / ' ! ? & % [space])
- Capital letters (A-Z)

Turning the knob left or right will present the previous or next letter in the list respectively.

▶ INS > < DEL

Turning the knob to the left deletes the character at the current cursor position.

Turning to the right inserts a blank space at the current cursor position.

▶ STORE TO

This allows you to store your profile at any of the 10 profile locations in VoiceLive Rack. As you turn the knob you will see the name of the profile stored at the current number and when you stop, the name of your new preset will replace it.

See the MANAGE SETUP tab description on the preceeding page for details on how to restore deleted or overwritten presets.

The Store Button

LOAD SETUP Tab Overview

In this tab you can load a previously stored setup profile. If no user profiles have been stored, loading any available EMPTY profile will result in all Setup values going to default values.

Ensure that any connected audio system is muted when loading setup profiles because input and output levels can vary dramatically.

To load a setup profile:

You must have stored a user setup profile previously or only default settings will be loaded.

1. Press the Store button and tab over to the LOAD SETUP tab.
2. Turn the knob below the LOAD FROM parameter to choose the profile to load. Any user-stored profiles will show DEFAULT if no name has been assigned.
3. Press the Store button to complete the load operation. A pop-up will show status.

When done, the new Setup menu parameter values will be loaded.

The Store Button

MANAGE SETUP Tab Overview

This menu allows you to erase user setup profiles and restore them to default settings. This operation is not undo-able so back up your setups using VoiceSupport if you want to store them.

To erase user setup profiles:

You must have stored a user setup profile in order to erase it.

1. Press the Store button and tab over to the MANAGE SETUP tab.
2. Use the leftmost knob to select the profile you want to erase.
3. Turn the rightmost knob under CONFIRM to YES.
4. Press the Store button to complete the operation.

Editing

Editing Overview

Basic editing, menu navigation and concepts are briefly discussed in the Quick Start and Basic Operation sections. This Edit Menu section discusses the actual parameters in detail for those that want to go beyond merely loading a new style in order to make changes to their sound.

Navigation

Press the Edit button or hold any individual effect block button (e.g. Double) to access the editing menus and make changes to the current preset. This will present the edit tabs. Press the right and left Navigate arrow buttons to cycle right and left through the tabs shown at the top of the screen. Each tab represents a front panel button with additional tabs for Mic-control, Switch3 and overall preset settings. Holding either arrow button jumps from the uMod tab to the Preset tab.

Turn the Mix/Edit knobs to change the setting of the parameter directly above that is within the highlighted row. Up to 3 rows are visible per screen with additional rows accessible by turning the Data Wheel or using the Up/Down arrow buttons. A vertical scroll bar at the right of the screen shows where you currently are in the menu.

To exit the Edit menu, press Home.

Saving Changes

You can quickly store at the current preset location from within the Edit menu by pressing the Store button twice. If you're finished editing, press Home to exit the Edit menu.

You can rename the preset and store to another location by pressing Store once and changing the values at the bottom of the Store menu. When you've edited the name and found a new place to store your edited preset, press Store again.

To cancel an incomplete Store operation from within the Store tab, press Home or Edit.

The Edit Button

µMOD Tab Overview

µMod is short for micro-modulation ("µ" is the scientific symbol for micro). The µMod effect is capable of creating many different sounds that range from subtle but lush thickening to creatively destructive. It uses a combination of stereo pitch shifting (Detune), small amounts of stereo delay (Delay), and then a complex path of filtering, feedback, and modulation. µMod does a faithful job of emulating classic detune, chorus, flange and thickening sounds.

▶ STYLE

Use the soft knob assigned to this parameter to choose a pre-programmed µMod style you like.

▶ LEVEL

Sets the mix level for the µMod effect.

▶ WIDTH

Normally, the output of the µMod effect is panned hard left and right. This parameter sets the stereo imaging of the µMod effect to mono (0%) and stereo (100%).

▶ DETUNE LEFT / DETUNE RIGHT

Applies a small amount of pitch shift to the left or right sides independently. This setting is shown in cents and the maximum is +/- 25 cents.

▶ SPEED

This setting sets how fast the delay time modulation occurs. In order for this to be audible, the depth amount parameter has to be nonzero. The setting range is 10.00 Hz (very fast) to .05 Hz (very slow).

▶ DEPTH-L / DEPTH-R

These set the amount of modulation of the delay time for the left and right delays. If one delay is set to 10mS, for example, a setting of 50% will vary the delay time between 15mS and 5mS at the rate set by the SPEED parameter.

▶ OUT PHASE

The OUT PHASE setting puts the output of the left and right sides of the µMod effect out of phase to create more 3D sound space around the effect. Note that this may potentially limit the effect's ability to collapse to mono. LEFT puts the left side out of phase with the right which is normal phase and vice versa for the RIGHT value. BOTH puts both sides out of phase with their respective sides' correct phase while remaining in phase with each other.

▶ DLY L / DLY R

Sets the left and right delay times. Up to 50 ms of delay is available on the left and right delay lines to create effects from flange to slapback.

▶ FEEDBACK L / FEEDBACK R

Re-introduces a portion of the audio output signal of the µMod block back to the input to create flanges, tube and chorus effects. Values above 90 add a high amount of gain and cause distortion and higher audio levels.

▶ PHASE

This defines the modulation phase which is the phase relationship between the left and right modulation LFOs (oscillators). In a flange style, for example, setting this to 0 degrees puts all of the effect in the center while setting it to 180 degrees pulls the effect far into the stereo field.

The Edit Button

▶ WAVE

This lets you choose the modulation waveform from Square, Triangle or Sine to vary the periodic nature of the modulation effect.

▶ XFB L / XFB R

These send cross feedback from the left and right delay lines (XFL L) and from right to left (XFR L). Cross feedback returns the delayed audio to the opposite side's delay line. This can produce interesting stereo effects.

▶ LOWCUT L / LOWCUT R & HICUT L / HICUT R

These gentle highpass (LOWCUT) and low pass (HIGHCUT) filters control the bandwidth of the µMod feedback paths. These are very useful for tailoring Flange effects.

▶ LEAD To UMOD

Sets the amount of lead voice sent into the µMod block.

▶ HARM To UMOD

Sets the amount of harmony level sent into the µMod block. The HARMONY effect must be on to feed this send.

▶ LEAD LEVEL

Controls the lead (dry + Tone) voice level when the individual effect is turned on with its respective footswitch. This allows a unique wet/dry mix for individual effects. When multiple effects are active, the lowest LEAD LEVEL value will determine the value.

Note that the LEAD EFFECT SENDS parameter on the PRESET tab must be set to PRE in order for any signal to get to the effect block when LEAD LEVEL is set to OFF.

The Edit Button

DELAY Tab Overview

The delay effect is a configurable echo. You can control how far apart the echoes occur (Delay Time), and whether the echoes fade out quickly or slowly or build on themselves. In addition, there are filtering and stereo controls that allow you to create many popular delay sounds. Delays can be typically be categorized into the two listed categories below:

Short Delays:

- Initial reflections
- Slaps

Long Delays (max stereo delay is 2500 ms or 2.5 sec.)

- Mono taps
- Stereo taps
- Syncopated taps
- Ping-pongs (delays travelling from left to right)

▶ STYLE

Use the soft knob assigned to this parameter to choose a pre-programmed delay style you like.

▶ LEVEL

Sets the mix level for the delay effect.

▶ WIDTH

The 2 delay lines are panned hard left and right. This allows you to determine the stereo imaging of the delay effect. 0% is mono, 100% is fully stereo.

▶ SOURCE

Determines which of the three methods you want to use to set delay times. These include:

TIME: This allows you to set the exact delay time for the left and right delay lines manually with the TIME L and TIME R controls.

TAP: This allows you to tap the Tap button when it is assigned to TEMPO in the PRESET tab.

MIDI: The unit can be set to derive its delay times from incoming MIDI clock signal.

▶ TEMPO

This is where you can manually set the tempo in beats per minute (bpm) that is used to derive delay times for both the left and right delay lines. The bpm value of the TEMPO parameter is only applied to the delay times when TAP or MIDI is set as the source.

▶ DUCKING

When DUCKING is set to ON, the delay output will be reduced while you are singing. At the end of a sung phrase, the delay effects return to the level you set. This can increase the clarity of your vocals while still sounding very "wet". The amount of attenuation and attack time for the ducking to engage are set with the DUCKING AMOUNT and DUCKING TIME parameters further down in this menu.

▶ DIV L / DIV R

When the source is set to TAP or MIDI, these parameters divide the tempo into even (e.g. 1/4 or quarter notes) or syncopated sub-beats (e.g. 1/4 triplets, 1/4 dotted notes) for the left and right delays.

▶ TIME L / TIME R

These parameters are used to display the exact delay time and to allow editing with all SOURCE settings. You may set from 0 to 2500ms (2.5 seconds) of delay for the left and right delay lines.

The Edit Button

▶ FEEDBACK L / FEEDBACK R

Re-introduces a portion of the audio output signal of the Delay block back to the input to add echo repeats.

▶ XFB R TO L / XFB L TO R

These send cross feedback from the left and right delay lines (XFL L) and from right to left (XFR L). Cross feedback returns the delayed audio to the opposite side's delay line for ping pong type effects.

▶ LOCUT L / LOCUT R & HICUT L / HICUT R

These gentle highpass (LOWCUT) and low pass (HIGHCUT) filters control the bandwidth of the delays. Applying these filters to the delays can create the feeling of space while not obscuring the main vocal signal.

▶ DUCKING AMOUNT

This sets how much attenuation (gain reduction) is applied to the delayed signal when a vocal is present. For ducking to not be too obvious, a slight reduction of -6 dB is best. The DUCKING parameter must be set to ON for this to have any effect.

▶ DUCKING TIME

Ducking time sets how long it takes to ramp up the delay level at the end of vocal phrases.

▶ LEAD TO DELAY

Sets the amount of lead voice sent into the Delay block.

▶ HARM TO DELAY

Sets the amount of harmony level sent into the Delay block. The HARMONY effect must be on to feed this send.

▶ UMOD TO DELAY

This allows you to feed the delay block with the effected output of the µMod block. The µMod effect must be on to feed this send.

▶ LEAD LEVEL

Controls the lead (dry + Tone) voice level when the individual effect is turned on with its respective footswitch. This allows a unique wet/dry mix for individual effects. When multiple effects are active, the lowest LEAD LEVEL value will determine the value.

Note that the LEAD EFFECT SENDS parameter on the PRESET tab must be set to PRE in order for any signal to get to the effect block when LEAD LEVEL is set to OFF.

The Edit Button

REVERB Tab Overview

Reverb is the arguably the most common vocal effect. It can add a spaciousness that softens the abrupt beginnings and endings of lyric phrases. Many reverb types are meant to imitate the natural sound of spaces like churches, clubs and halls but not all. Some reverb effects are recreations of electro-mechanical effects meant to imitate real spaces like plates and springs.

Reverbs are made up of early reflections and the longer reverberant sounds known as the tails. There are usually controls to control the balance of room level and tail. Additionally, a small delay can be added between the dry voice and the reverb signal that adds clarity by briefly separating the dry voice from its reverb. By far the most important control for reverb is the level. A single reverb patch can have a different result for the audience whether it is mixed quietly or boldly in the mix.

▶ STYLE

Use the soft knob assigned to this parameter to choose a pre-programmed reverb style you like.

▶ LEVEL

Sets the mix level for the Reverb effect.

▶ WIDTH

Sets the stereo imaging of the Reverb effect. 0% is mono, 100% is fully stereo.

▶ DECAY

Sets the length of the reverb tail from 10mS to 20 seconds. Note that, due to the complex nature of Reverb algorithms, a decay time of 4 seconds may sound quiet different from one style to the next, even when the rest of the settings are identical.

▶ LO COLOR / HI COLOR

These are preset-frequency filters inserted into the Reverb feedback path that tailor the low and high frequency response and decay of the tails. Values toward -50 will cut response in its respective band and a values toward 50 increase response.

▶ HI FACTOR

This allows you to raise or lower the level of the high band of the Reverb tail independently.

▶ EARLY REFLECTIONS / TAIL LEVEL

These parameters allow you to attain the right balance between reflections you would hear from close surfaces (EARLY REFLECTIONS) with those from surfaces further away (TAIL LEVEL). The settings for the early reflections in each style are slightly different but non-editable.

▶ DUCKING

When DUCKING is set to ON, the Reverb block's output will be reduced while you are singing. At the end of a sung phrase, the effects return to the level you set, increasing the clarity of your vocals while still sounding very "wet". The amount of attenuation and attack time for ducking are set with the DUCKING AMOUNT and DUCKING TIME parameters further down in this menu.

▶ DIFFUSE

Also known as Diffusion, this is a very subtle parameter used to simulate and control the density of the reflections inherent in real acoustic spaces. Low DIFFUSE values (-25 to 0) are intended to introduce more discrete echo-like motion to the tail where high values (0 to 25) make the tail smoother-sounding.

The Edit Button

▶ PRE DLY

Pre Delay introduces a short (up to 100 ms) delay between the dry audio signal and the onset of reverb to help simulate larger spaces and to provide audio separation between the dry signal and the reverb effect.

▶ SPEED

This controls the rate of pitch modulation set by the DEPTH parameter. This modulation adds complexity and slight chorusing between the reverb tail and the input voice. The values range from -25 to 25.

▶ DEPTH

This controls the amount of pitch modulation applied to the reverb tail. The values range from -25 to 25.

▶ DUCKING AMOUNT

This sets how much attenuation (gain reduction) is applied to the reverb signal when a vocal is present. For ducking to not be too obvious, a slight reduction of -6 is best. The DUCKING parameter must be set to ON for this to have any effect.

▶ DUCKING TIME

Ducking time sets how long it takes to ramp up the reverb level at the end of vocal phrases.

▶ LEAD to REV

Sets the amount of lead level sent into the Reverb block. This and the remaining send and Lead Level parameters are not stored as part of the styles.

▶ HARM to REV

Sets the amount of harmony level sent into the Reverb block. Harmonies must be on to feed this send.

▶ DEL to REV

This allows you to feed the reverb block with the effected output of the delay block. The DELAY footswitch must be on to feed this send.

▶ LEAD LEVEL

Controls the lead (dry + Tone) voice level when the individual effect is turned on with its respective footswitch. This allows a unique wet/dry mix for individual effects. When multiple effects are active, the lowest LEAD LEVEL value will determine the value.

Note that the LEAD EFFECT SENDS parameter on the PRESET tab must be set to PRE in order for any signal to get to the effect block when LEAD LEVEL is set to OFF.

The Edit Button

HARDTUNE Tab

▶ HARDTUNE KEY

Sets HardTune's source for musical information. Most pitch correction products require either scale information, offline editing or MIDI performance to yield correction. VoiceLive Rack goes one further and allows you to play your guitar or MIDI keyboard normally and get the Hardtune effect.

When HARDTUNE KEY is set to FOLLOW HARMONY the HardTune effect will follow the same source as the harmony voices. Thus:

- If a guitar or MIDI keyboard is controlling your harmony voices, it would also control the HardTune effect.
- If Harmony is set to a fixed Key and Scale, these same parameters will be used by the Hardtune effect.
- When Harmony is set to SHIFT, MIDI NOTES, or MIDI NOTES 4 CHAN, HardTune will use its own key and scale parameters.

When HARDTUNE KEY is set to MANUAL/CUSTOM a different Key and Scale may be set with the KEY and SCALE parameters at the bottom of the tab.

▶ HARDTUNE RATE

RATE determines how fast the algorithm pulls you toward scale tones. A value of 0 is off and a value of 100 is instant resulting in something like the infamous "Cher" effect where the pitch correction effect is stair-stepped and obvious when using non-chromatic scales (those with at least a wholetone jump between most of the scale tones). Usually, values around 20 yield acceptable results for smooth, corrective pitch correction.

▶ HARDTUNE AMOUNT

Allows you to soften the correction effect. A value of 50% for example will only pull you halfway toward a correction scale target at the speed set by the HARDTUNE RATE parameter. For a true HardTune sound, set it to 100%

▶ HARDTUNE SHIFT

Sets the a relative shift in semi-tones above or below the input vocal. This is useful for transposing or creating character voices while simultaneously pitch correcting.

▶ HARDTUNE WINDOW

Allows you to determine how close to a valid scale note you have to be before the algorithm corrects you. For example, a value of 80 cents means that only when you are singing within +/- 40 cents away from the target scale note will you be corrected. The maximum value is 600 cents. At maximum, a custom scale could be created with only one note for special effects. In a Major scale having no more than 100 cents on either side of any scale tone a setting of 200 would result in fulltime correction activity.

▶ KEY & SCALE

These set the musical map that the HardTune effect will correct to only when HARDTUNE KEY is set to MANUAL/CUSTOM.

The manual scale selection is different from the ones available for Harmony. They are:

- Major
- Minor-Har (harmonic minor)
- Minor-Nat (natural minor)
- Minor-Asc (ascending melodic minor)
- Chromatic (no key or scale required)

The Edit Button

The key that is set in the HARMONY tab will be displayed but not editable when the current preset is based on Scale Harmony and HARDTUNE KEY is set to FOLLOW HARMONY

▶ NOTE & ENABLED

These are applicable when you wish to edit a custom scale for HARDTUNE. A custom scale is indicated by a series of dashes and circles: "-" and "o". Each of these symbols represents where a note is in the correction scale or not. You can change the custom map by selecting a note you want to be corrected to or to jump over with the NOTE parameter and setting its ON or OFF status with the ENABLE parameter. You'll see an indication of your custom scale with "o" representing notes that are enabled, and "-" showing notes that are disabled. For example "o-o-oo-o-o-o" would represent a major scale in any key (the octave up note is implied by the root note).

The Edit Button

DOUBLE Tab Overview

The Double effect uses the same type of Humanization technology as in the Harmony effect to create up to four overdubbed versions of your voice. The four voices are set to unison intervals as opposed to the move-able intervals available for the harmony voices. Unlike simple detune or micro-shift techniques available with the µMod effect, Double simulates the sound of a vocalist overdubbing their vocal part multiple times. Many of the edit parameters for the Doubling tab are the same as for Harmony tab.

▶ STYLE

Use the soft knob assigned to this parameter to choose a pre-programmed Double style you like. This allows you to quickly choose an effect close to what you want instead of having to go directly into the individual parameters each time.

▶ LEVEL

Sets the level for the overall Double effect in the current preset.

▶ HUMANIZE STYLE

These apply small pitch and time variations to simulate natural variation in human singing. For more information see HUMANIZE STYLE in the HARMONY Tab section preceeding.

▶ HUMANIZE AMOUNT

Increases or decreases the amount of Humanize variations to the Double voices only.

▶ V1 to V4 PAN

Each voice may have a unique pan position. There are 100 possible steps in each of the left and right pan positions.

▶ V1 to V4 LEVEL

These settings control the volume of each of the voices and are used to set the number of voices active for Doubling. The range of values goes from Off to 0 dB (Full).

▶ V1 to V4 PORTA

Each voice has its own Portamento time. Portamento is a delayed response to the pitch movement of your singing voice. It is also referred to as "Glide" in synthesizers. The range of values equals approximately how long the upwards or downwards slide will take to reach each new note. Setting each voice to different values greatly assists the illusion of other singers singing with you.

▶ V1 to V4 SMOOTHING

At low values, Smoothing acts like pitch correction for the harmony voices. With the voices corrected like this, some Portamento is usually required to help soften note to note transitions unless a robot-like effect is desired. Higher values offer progressively less correction. Like Portamento, setting each voice with a unique value of the Smoothing parameter helps the harmonies sound more natural.

▶ V1 to V4 GENDER

Each voice has its own timbre adjustment in the form of the GENDER control. Values below 0 lend each voice a more masculine and deeper effect and values above 0 lend a more feminine or thinner effect.

The Edit Button

▶ LEAD LEVEL

Controls the lead (dry + Tone) voice level when the individual effect is turned on with its respective footswitch. This allows a unique wet/dry mix for individual effects. When multiple effects are active, the lowest LEAD LEVEL value will determine the value.

Note that the LEAD EFFECT SENDS parameter on the PRESET tab must be set to PRE in order for any signal to get to the effect block when LEAD LEVEL is set to OFF.

▶ CHOIR

This is a duplicate of the CHOIR ON/OFF parameter from the HARMONY edit tab. Whenever CHOIR is on, both Harmony and Doubling effects share the same effect.

The Edit Button

HARMONY Tab Overview

The Harmony block in VoiceLive Rack produces up to 8 harmony voices and is the home of the Choir effect.

IMPORTANT NOTE: The parameters available on the HARMONY Tab and their organization differs depending on the value of the NATURALPLAY parameter at the bottom of the tab. This section begins by describing the most common NATURALPLAY harmony mode: AUTO INPUT SENSE. Following the parameter descriptions for AUTO INPUT SENSE, exceptions and differences for the other NATURALPLAY modes are listed.

▶ STYLE

Use the soft knob assigned to this parameter to choose a Harmony style you like. Styles configure useful settings to pre-programmed values to allow you to make changes quickly. The selection of styles will change depending on the setting of the NATURALPLAY parameter.

▶ LEVEL

Sets the level for the overall Harmony effect in the current preset.

▶ V1 to V4 VOICING

Here you set the pitch shift intervals of voices 1 through 4 relative to your input pitch. The names of the intervals change depending on NATURALPLAY mode. In the two MIDI NOTES modes, the VOICING parameters disappear entirely. The options start at the lowest harmony interval and go the highest.

▶ V1 to V4 LEVEL

The four knobs control the relative volume of each voice. This is also where voices are turned on an off. The range of values goes from Off to 0 dB (Full). Typically all voices are set at the same level unless you want to highlight or minimize a particular voicing interval.

▶ V1 to V4 GENDER

Each voice has its own timbre adjustment in the form of the GENDER control. Values below 0 lend each voice a more masculine and deeper effect and values above 0 lend a more feminine or thinner effect.

▶ V1 to V4 PAN

Each voice may have a unique pan position. There are 100 possible steps in each of the left and right pan positions. Note that the Setup parameter: OUTPUT must be set to STEREO in order to hear the panning effect.

▶ DOUBLING and DOUBLE LEVEL

This can thicken the sound of your harmony voices by engaging a doubled version of each voice. The doubled voices are lightly humanized with modifications of the current HUMANIZE STYLE values in order to produce a doubled voice effect rather than simply adding level. When the value of either the HUMANIZE STYLE or AMOUNT is Off or 0 respectively, the doubled harmony voices are still slightly humanized. The level of the doubling voice is dependent on the level of each harmony voice, then by the overall doubling level parameter; DBL LEVEL.

▶ CHOIR, CHOIR LEV and CHOIR STYLE

The Choir effect strives to emulate the detuning, timing and chorusing that occurs when human voices sing together in choral performances and recordings. The Choir effect is applied to the Harmony voices and the Harmony Doubling and Double voices if they are active. CHOIR ON/OFF

activates the style and level set by the CHOIR STYLE and CHOIR LEV parameters respectively. To create a convincing choir performance, it helps to sing legato (sustained) phrases as opposed to staccato or melismatic riffs.

▶ HUMANIZE STYLE

The term "humanize" simply means the application of processes designed to increase realism. All harmony modes usually benefit from careful application of humanization styles that make each harmony voice respond with small pitch and timing variations different from your voice. Each Humanize Style configures each of the four voices differently; Voice 1 has slightly different parameter values than say Voice 4 in the same style but all four voices will work together to produce a useful overall effect.

The various Humanization styles consist of various amounts of the following modifiers:

- Onset pitch events - This is also known as "scooping" which adds a generated pitch trajectory for each new note that is different than the sung note.
- Pitch modulation - a random wave generator wobbles the pitch in non-periodic ways to simulate even the finest singers' pitch variation.
- Timing delay and modulation - Singers are unable to start notes at the same time with the exactness of a machine so this algorithm applies slight delays to the onset of notes and then adds modulated time variation to sustained portions of notes.
- Level (volume) modulation - This effect is like a subtle tremolo with a non-periodic or semi random waveform that simulates the way different singers change note volumes as they sing.

▶ HUMANIZE AMOUNT

You can vary the amount of humanization for the harmony voices. All the styles except for the last one: TIME & PITCH were designed at middle values to allow you to add or remove effects as you see fit. TIME & PITCH was designed so you can create wild special effects as you experiment with high values.

▶ VIBRATO STYLE

This simulates the regular human pitch variations we call Vibrato. There are 7 styles available in progressively more intensity as you browse down the list.

Like the HUMANIZE effects, each voice is treated slightly differently by the VIBRATO algorithm so the voices don't all sound exactly the same.

▶ VIBRATO AMOUNT

You can vary the amount of vibrato intensity for the overall style with this parameter. All the styles were designed to be useful at middle values but you can add or remove vibrato as you like.

▶ V1 to V4 PORTA

Each voice has its own Portamento time. Portamento is a delayed response to the pitch movement of your singing voice. It is also referred to as "Glide" in synthesizers. The range of values equals approximately how long the upwards or downwards slide will take to reach each new note. Setting each voice to different values greatly assists the illusion of other singers singing with you.

▶ V1 to V5 SMOOTHING

At low values, Smoothing acts like pitch correction for the harmony voices. With the voices corrected like this, some Portamento is usually

required to help soften note to note transitions unless a robot-like effect is desired. Higher values offer progressively less correction. Like Portamento, setting each voice with a unique value of the Smoothing parameter helps the harmonies sound more natural. When NATURALPLAY is set to MIDI NOTES, high values of smoothing will sound out of tune.

▶ GUITAR CHORDS

This parameter changes the harmony note response to DOM7 guitar chords only. At the default setting; ACCEPT DOM7, whenever you play a dominant 7th chord and the combination of your singing note and harmony voicing is set to produce a 7th harmony, you'll hear the 7th.

In a song composed largely of DOM7 chords, it's not that easy to sing a melody composed of all of the 7ths and thus, many harmony singers move to the chord root instead. Broadly speaking, this is also a difference between a "Pop" sounding harmony and a more "Bluesy" harmony sound. This is what the IGNORE DOM7 setting does.

▶ HOLD RELEASE

This varies the amount of time it takes for any notes sustained with the Harmony Hold feature (only available with the Switch3 footswitch or MP-75 mic with Mic-Control) to decay after the switch is released. This makes for a more natural sounding release. Note that no new harmony notes will sound until the time you set with this parameter has elapsed.

▶ TUNING

The Tuning parameter allows you to affect tiny pitch adjustments to your harmony intervals to achieve Equal, Just or Barbershop tuning. Each preset can have a different value for TUNING.

Equal tuning is the "compromised" tuning standard that instruments such as guitar and keyboards are designed to produce. This tuning mode allows you to play and sing in any key without completely retuning your instrument for every chord. When your harmonies are set to this mode, the harmony notes produced by VoiceLive Rack will sound exactly in tune with the Equal-tuned instruments you use for accompaniment.

Just tuning is what is known as "perfect" intonation between your lead voice and harmony intervals. This is the tuning that occurs when singers sing a cappella, or without instruments. The pitches of major and minor thirds, fifth intervals and others are brought into exact mathematical symmetry with your lead voice by introducing very small pitch shifts to the harmonies which overcomes the slight "beating" of harmonics that occurs with Equal tuning mode. Because of this, however, the harmony intervals may sound infinitesimally out of tune with your instrument.

Barbershop has the same tuning offsets as Just tuning mode with one difference. Barbershop tuning uses your singing voice as the pitch reference where Just intonation uses the root of the current chord played via MIDI.

▶ HARMONY EQ

The Harmony EQ settings are separate from the Global TONE control. This allows customizing of the EQ of the Harmony *and Double* voices separately from your lead voice. For a description of the controls, see EQ Tab With ADAPTIVE Off.

▶ LEAD LEVEL

Controls the lead (dry + Tone) voice level when the individual effect is turned on with its respective footswitch. This allows a unique wet/dry mix for individual effects. When multiple effects are active, the lowest LEAD LEVEL value will determine the value.

Note that the LEAD EFFECT SENDS parameter on the PRESET tab must be set to PRE in order

for any signal to get to the effect block when LEAD LEVEL is set to OFF.

▶ NATURALPLAY

This parameter defines how VoiceLive Rack derives the musical information that makes the Harmony voices and Hardtune effects follow your song musically. The most common value for this is AUTO INPUT SENSE which automatically decides which of the GUITAR IN, MIDI IN and AUX IN you are currently playing into so it can derive musically correct effects. Changing the value of this parameter changes the number and organization of settings in the HARMONY tab. The values are described below:

- AUTO INPUT SENSE - Most harmony presets are based on this mode. This mode automatically decides which of the GUITAR IN, MIDI IN and AUX IN you are currently playing so it can derive musically correct harmonies from that input.
- GUITAR - This forces the current preset to look only to the GUITAR IN for musical input. In the case where you have a MIDI sequencer and guitar into VoiceLive Rack, this will cause it to ignore the MIDI input for harmony control.
- MIDI - This forces the current preset to look only to the MIDI IN for musical input. In the case where you have a MIDI sequencer and guitar into VoiceLive Rack, this will cause it to ignore the guitar input.
- AUX INPUT - Harmonies will ignore all but this input if the other inputs are used simultaneously.
- SCALE - Changes the preset to scale mode which will ignore ongoing musical input from an instrument in favour of the Key and Scale setting you need to input. Scale harmonies are a great alternative to instrument-controlled harmony for certain songs.
- SHIFT - Many doubling presets that also use the Harmony block are based on this mode. SHIFT allows you to pick pitch shift intervals that fall outside of the standard "musical harmony" definition and as such, require no musical input from you.
- MIDI NOTES - Allows you to specify exact melodies and chords as harmony pitches from a MIDI keyboard or sequencer. A MIDI note held during a sung arpeggio will not move until the note is changed. As well, a single, sustained input note from you can have a moving harmony arpeggio by playing it on a keyboard. This mode is for people who want to arrange their harmony vocals exactly and have keyboard playing skills. When set to NOTES, the Harmony DOUBLING parameter determines interesting layering of the 8 available harmony voices.
- MIDI NOTES 4 CHAN - This is the same as MIDI NOTES mode with the difference that each of the four harmony voices has its own MIDI channel. This is best when you want the harmony voices to have fixed pan positions and MIDI pitch bend movement.

The Edit Button

NATURALPLAY Settings and Parameter Changes

Following are the parameters that change when the NATURALPLAY mode is set to a value *other than* AUTO INPUT SENSE, GUITAR, MIDI and AUX INPUT.

The parameters that disappear when changing modes are not listed.

Note that each of the following modes has it's own unique selection of Styles.

NATURALPLAY = SCALE Mode

▶ KEY & SCALE

These two parameters set a fixed key and scale for Harmony and Hardtune effects. There are three major and three minor scales to choose from. For more information on these scales, see the Scales Diagram.

A custom scale can also be selected for Harmony only where the relationship of each harmony voice to a given input note can be defined by you. In the majority of presets, the default custom scale is defined to give drone notes based on the selected key.

▶ V1 to V4 VOICING

The voicing alternatives change in SCALE mode and they are displayed in scale degree terminology. They are organized lowest to highest, relative to the input note.

▶ MAP IN SOURCE / MAP IN NOTE

These allow to customize individual harmony note intervals relative to your input note and create a custom scale. A custom scale is not shareable with other presets until the preset is copied to another location.

To customize a scale, pick a key and scale closest to what you want for your song. Sing the note you upon which you want the harmony interval to change (MAP IN SOURCE set to SUNG) or select it with the MAP IN NOTE parameter (MAP IN SOURCE set to MANUAL). Now you can change the harmony interval with the MAP IN NOTE parameter described below.

▶ V1 to V4 MAP OUT

Sets the interval relationship between each of the four harmony voices for the current input note and key and scale settings. Typically, incrementing or decrementing any active harmony voices can make a scale work over your combination of melody and chord change.

NATURALPLAY = SHIFT Mode

▶ V1 to V4 VOICING

The voicings for Shift mode have no musical intelligence and as such will produce harmony a fixed, unmoving interval away from your lead voice. You can select any semitone interval from -24 semitones to +24 semitones. They are organized lowest to highest, relative to the input note.

The Edit Button

NATURALPLAY = MIDI NOTES, MIDI NOTES 4 CHAN Modes

▶ DOUBLING

This changes from an ON/OFF parameter to a selection of the number of voices you can control via MIDI.

- OFF (8 VOICES) - No harmony voice doubling is possible but you have access to 8 unique MIDI note intervals upon which to build harmonies.
- ON (4 VOICES X2) - With this you can play up to 4 voices at once, but each voice can be doubled for extra thickness.
- UNISON (1 VOICE X8) - All 8 voices are triggered from a single MIDI note. This is similar to a synthesizer mode of the same name where you can layer all voices on one note.

▶ ATTACK & RELEASE

These settings are designed to introduce fade ins and fade outs to the harmony voices. The Attack parameter provides a gentle volume fade-in when you strike a MIDI note during a sustained sung note. The Release parameter adds a smooth fade-out if you release your MIDI note as you continue to sing. The values range from 0 to 1000 milliseconds for the Attack and 0 to 2000 ms for the Release.

▶ NOTES EXTENSION

This feature is most useful when singing to a commercial MIDI file that is controlling the harmony voices in VoiceLive Rack. Often the MIDI notes used to control harmony cut off where the singer might prefer to hold the notes longer and this makes for a more singer-oriented MIDI performance.

Setting Notes Extension to ON allows Harmony voices triggered in Notes mode to continue sounding after the MIDI note has ceased for as long as you sing a sustained note.

NATURALPLAY = MIDI NOTES Mode Only

▶ PAN, GENDER, PORTA, SMOOTH, and Individual Voice LEVEL

The ability to control voices individually is removed in MIDI NOTES mode to simplify and reduce the number of parameters required when 8 voices are active. In their place are macro-type settings for the features listed above. For individual control of 4 MIDI voices, you can use MIDI 4 CHAN mode.

The Edit Button

TRANSDUCER Tab Overview

The Transducer effects block uses distortion and steep filters to emulate the sound of radios, phones and devices that generally degrade the audio signal.

▶ TRANSDUCER STYLE

Use the soft knob assigned to this parameter to choose a Transducer style you like. The Routing and Gate Threshold parameters are not part of the style.

▶ ROUTING:

Selects where the Transducer effect is inserted into the signal path for maximum flexibility. The options are:

- OFF - No routing.
- LEAD - Transducer is inserted on the Lead voice only. Harmonies and Doubling are unaffected.
- HARMONY - Transducer is inserted on the Harmony path only.
- VOICES - Transducer is inserted on both the Lead, Harmony and Doubling voices.
- LEAD FX - Transducer is inserted on the Lead send to the µMod, Delay and Reverb effect sends. Lead voice will be clean and the effects will be affected by the Transducer style.
- HARM FX - transducer is inserted on the HARMONY send to the effects. Lead and Harmony voices will be clean but the effects driven by only the Harmonies will be affected by the Transducer style.

▶ LOW CUT and HIGH CUT

Sets the cut-off frequency for these very steep low and high shelving filters. TIP: these and the PRESENCE filters can be used without Distortion effects to apply more radical EQ to your presets.

▶ GATE THRESHOLD

A gate, separate from the main Gate under the Tone button is used to help prevent feedback when using the Transducer with heavy distortion or presence filtering that can introduce feedback in a live environment. This parameter sets how loud you must sing in order to open the gate.

▶ DISTORTION TYPE and DISTORTION AMOUNT

These are pre-configured distortion styles that range from Overdrive through Saturation and Distortion and finally, Fuzz. Each has a unique character. Though these styles have no detailed controls like the Delay or Reverb tabs for example, you can add or reduce the distortion component and apply filtering with LOW CUT, HIGH CUT, and PRESENCE to customize them.

The AMOUNT parameter adjusts the amount of distortion for the current distortion style. This is not the same as the IN and OUT GAIN controls which work on level adjustment. The Distortion Amount control adjusts the algorithmic distortion curve that you can further trim with the TRANSDUCER IN GAIN and TRANSDUCER OUT GAIN controls.

Note that your IN GAIN in the Setup menu must be sufficient in order to hear the correct amount of distortion present in distorted styles.

The Edit Button

▶ TRANSDUCER IN and OUT GAIN

These act similarly to a guitar distortion pedal or an amplifier with input gain and master level controls. IN GAIN boosts or attenuates the amount of distortion for the distortion type selected.

When you adjust the IN GAIN parameter, just like a guitar amplifier, the overall level of the effect goes up and down. Use the OUT GAIN control to adjust the output level of the Transducer block to properly balance the current preset with the others.

▶ PRESENCE GAIN, PRES FREQ and PRES WIDTH

The parametric EQ allows a peak/dip filter to be added to help emulate the sonic characteristic of various speakers such as a megaphone which has a very narrow mid peak. GAIN adjusts the amount of boost or attenuation while FREQ sets the center frequency of the filter. WIDTH sets how narrow or wide the filter will be set. Note that excessive boost of certain narrow frequencies can induce feedback with even the best monitor equipment and placement.

The Edit Button

RHYTHMIC Tab Overview

Using the Rhythmic features, tap tempo can produce stuttering and panning effects on your lead, Harmony and Double voices in time with your music.

Using the Rhythmic Features

1. Select a Rhythmic-based preset. In the factory presets, they are located at numbers 208-216. Otherwise, you can press the Rhythmic button in any preset to hear an example of this effect.
2. Set a tempo you want by tapping the Tap button.
3. Sing a sustained note or a legato melody. If MIC-CONTROL in the display shows RHYTHMIC OFF, press the Mic-Control button to hear the effect.

You can also press the Rhythmic button in any preset to audition the effect.

▶ STYLE

This is a small collection of pre-authored Rhythmic effects. Ensure that the DEPTH is greater than 0 to audition the different styles.

▶ MODE

This button changes the user controls that are available in this tab between two Rhythmic sub-effects: RHYTHM and SAMPLE.

When MODE is set to RHYTHM, this imposes level modulation on various targets (LEAD LEVEL, GENDER etc.) using various waveforms. This can be used for stereo panning, tremolo or chopping effects.

When MODE is set to SAMPLE, a short snippet of your singing is looped to produce a stutter effect each time you press the Rhythmic button.

Turning the effect off then on again clears the previous sample and loops the new segment.

MODE = RHYTHM

As mentioned, the parameters in this tab change according to the MODE setting. The following are visible only when MODE is set to RHYTHM.

▶ DEPTH

Sets how much intensity the waveform TYPE has on the TARGET.

▶ TARGET

Determines what is modified.

LEAD LEVEL	L. GENDER, (Lead only)
LEAD PAN	HARM LEVEL,
HARM PAN	L+H LEVEL (Lead and Harmony)
L+H PAN	

▶ DIVISION

Sets how many cycles of the TYPE waveform occur during the bar or the elapsed time over a number of beats.

8 x 1/4	7 x 1/4		
6 x 1/4	4 x 1/4		
1/2 DOT	1/2	1/2 TRIP	
1/4 TRIP	1/4 2-DOT	1/4	1/4 TRIP
1/8 DOT	1/8	1/8 TRIP	
1/16 DOT	1/16	1/16 TRIP	
1/32 DOT	1/32	1/32 TRIP	

▶ TYPE

Chooses between one cycle waveforms or a collection of syncopated phrases. At the beginning are the repeated waveforms which range

from SQUARE to SAWTOOTH DOWN. The SAMPLE AND HOLD option produces a random value on every beat division. Following these are the syncopated one bar patterns. When a syncopated pattern is selected, the division value shows N/A.

MODE = SAMPLE

▶ SAMPLE LOOP DIVISION

Divisions of the Tap Tempo beat can be sampled and repeated to create coarse-to-fine, short duration looping effects.

Sets the repeating length from quarter notes to finer resolutions.

1/4	1/4 TRIP	
1/8 DOT	1/8	1/8 TRIP
1/16 DOT	1/16	1/16 TRIP
1/32 DOT	1/32	1/32 TRIP

▶ SAMPLE LOOP CAPTURE

Defines when the sample is captured:

1. START: Starts recording when the Rhythmic button is pressed.
2. END: In the moments leading up to pressing the Rhythmic button.

In the case of #2, the length of time is determined by combination of the SAMPLE LOOP DIVISION and the current tempo.

▶ SAMPLE DIRECTION

Samples can play forward or reverse. This effect is most noticeable on longer duration samples.

▶ PATH

When this is set to POST, the captured sample will be a composite of all effects that were on when it was captured. When set to PRE the sample is captured dry but effects can be added and removed as the sample continues to loop.

The Edit Button

MIC-CONTROL Tab Overview

This tab sets parameters for the Mic-Control switch on the MP-75 microphone and the front panel Mic-Control switch.

▶ CONTROL

When turned to ON, this enables effect control from the mic. The front panel Mic-Control button can similarly be used when the MIC-CONTROL setting is set to COPY MIC SWITCH.

Note that this will also turn on phantom power in VoiceLive Rack if it is not already active. To avoid unexpected audio pops, mute your mixer first. Setting CONTROL to OFF does not de-activate phantom power.

▶ FUNCTION

This parameter sets the target for the Mic-Control switch for the current preset. If the value reads GLOBAL (*nnnnn*), this means a single FUNCTION has been configured for all presets in the Setup menu's MIC-CONTROL tab. See the MIC-CONTROL Tab in the Setup menu description for details.

These functions are:

- HARMONY MOMENT
- DELAY MOMENT
- HARDTUNE MOMENT
- TRANS MOMENT
- REVERB MOMENT
- UMOD MOMENT
- DOUBLE MOMENT
- RHYTHMIC MOMENT
- HARMONY
- DELAY
- HARDTUNE
- TRANS
- REVERB
- UMOD
- DOUBLE
- RHYTHMIC
- HARMONY HOLD*
- TEMPO
- CHOIR
- PITCH
- BYPASS

The MOMENT functions will only activate the effect while the button is held. All other functions will remain on or off after tapping the Mic-Control button.

* Harmony Hold is a feature that sustains the last harmony syllable indefinitely as you hold the Mic-Control button.

▶ MIC-CONTROL BUTTON

This setting affects the function of the front panel MIC-CONTROL button. This button can be configured to mimic the response of the MP-75 thumb switch or to directly access the MIC-CONTROL editing tab.

Setting this to COPY MIC SWITCH allows a quick check of the MIC-CONTROL function as you will see the target assignment's button light e.g. Harmony. When set to HOLD TO EDIT, holding the MIC-CONTROL front panel button will display the appropriate edit tab in the display.

The Edit Button

SWITCH3 Tab Overview

This edit tab allows you to set the target for each of the 3 switches on the TC-Helicon Switch3 footswitch while the current preset is loaded.

Each preset can have a different footswitch assignment as long as the GLOBAL parameter is set to OFF in the SWITCH3 tab of the Setup menu.

▶ SWITCH 1 FUNCTION

- OFF
- BYPASS
- STEP UP
- STEP DOWN
- PRESET UP
- PRESET DOWN
- HARMONY
- DELAY
- HARDTUNE
- TRANSDUCER
- REVERB
- UMOD
- DOUBLE
- RHYTHMIC
- HARMONY HOLD*
- CHOIR
- PITCH
- GUITAR FX
- SET KEY

▶ SWITCH 2 FUNCTION

Same as above.

▶ SWITCH 3 FUNCTION

Same as above.

* Harmony Hold is a feature that sustains the last harmony syllable indefinitely as you hold the Mic-Control button.

The Edit Button

PRESET Tab

▶ LEAD LEVEL

This allows the overall lead (dry with Tone) voice level to be reduced for the current preset. There are additional LEAD LEVEL parameters in the effect tabs (µMOD, DELAY etc) which may be used to reduce lead level further but only when their respective effect is active.

▶ LEAD PAN

Sets where your lead voice appears in the stereo field for the current preset. This can be useful when panning a Harmony voice to one side and your Lead voice to the other.

▶ LEAD EFFECT SENDS

When set to PRE, your voice will be sent to the µMOD, DELAY and REVERB effects independent of the LEAD LEVEL setting. 100% wet effects can be achieved when LEAD EFFECT SENDS is PRE and LEAD LEVEL is OFF in any of the effects.

When set to POST, effect levels follow the LEAD LEVEL value so the effects will stay in the same balance with your voice when its level is adjusted.

MIDI Implementation

	Parameter	CC#	Range	Comments
Effects On/Off				
	Harmony	110	0-63 off 64-127 on	
	Double	111	" "	
	Reverb	112	" "	
	HardTune	113	" "	
	µMod	116	0-63 off 64-127 on	
	Delay	117	" "	
	Trans	118	" "	
	Rhythmic	104	" "	
Block Edits				
µMod	Style	50	0-24	
	Level	90	0-127	
Delay	Style	51	0-12	
	Level	62	0-127	
Reverb	Style	52	0-30	
	Level	91	0-127	
Double	Style	53	0-5	
	Level	15	0-127	
Transducer	Style	55	0-15	
	Out Gain	105	0-127	
Harmony	Style	56	0-15	Only for NaturalPlay, Scale and Shift modes. N/A for Notes, Notes 4Chan.
	Level	12	0-127	
	Harmony Key	30	0-11	0=C, 1=C#, 2=D, 3=Eb, 4=E, 5=F, 6=F#, 7=G, 8=G#, 9=A, 10=Bb, 11=B
	Harmony Scale	31	0-6	0=Maj1, 1=Maj2, 2=Maj3, 3=Min1, 4=Min2, 5=Min3, 6=Custom Scale
	Voicing Voice1	89	0 to the # of voicings in mode	N/A for Notes and Notes 4 Chan modes
	Voicing Voice2	61	" "	"
	Voicing Voice3	88	" "	"
	Voicing Voice4	3	" "	"
	Level Voice1	46	maps to 127 values	
	Level Voice2	17	" "	
	Level Voice3	21	" "	
	Level Voice4	25	maps to 127	

MIDI Implementation

	Parameter	CC#	Range	Comments
	Gender Voice1	29	" "	64=Gender off, <64=Male, >64=Female
	Gender Voice2	19	" "	" "
	Gender Voice3	23	" "	" "
	Gender Voice4	27	" "	" "
	Humanize Style	16	0-6	
	Human Lvl	20	maps to 127	
	Vib Style	24	0-7	
	Vib Amt	1	maps to 127	Vib Style must not be 0
	Doubling Leve l	35	" "	0=Doubling off, 1-127 mapped to parm values
	Choir Lvl	72	" "	0=Choir off, 1-127 mapped to parm values
	Choir Style	73	0-14	
HardTune	Key	47	0-11	0=C, 1=C# etc. Sending any value de-activates Follow Harmony
	Scale	48	0-5	0=Major, 1=Minor-Har, 2=Minor-Nat, 3=Minor-Asc, 4=Chromatic, 5=Custom
	Rate	54	0-127	
	Amount	57	maps to 127	
	Window	49	" "	
Globals				
	Tone	106	0-63 off 64-127 on	On/Off only
	Pitch	107	maps to 127	0=off
	Step	115	0 to the # of steps in preset	0=Step 1, 1=Step 2 etc.
	Guitar FX	108	0-63 off 64-127 on	On/Off only
	Guitar Level	109	maps to 127	
	Guitar Rev Style	9	0=30	
	Guitar Rev Level	22	maps to 127	
	Guitar Mod Style	26	0-24	
	Guitar Mod Level	28	maps to 127	
System				
	Lead Mute	13	0-1	0=off, 1=on
	Voices Level	85	maps to 127	

MIDI Implementation

	Parameter	CC#	Range	Comments
	Delay/Re-verb Lvl	86	" "	
	Dry Pan	10	" "	127 MIDI values map to 201 pan values, Center = 64
	Output Level	7	" "	
	Bypass	114	0-63 off 64-127 on	
	Harmony Hold	119	" "	
	Sustain	64	" "	Active in MIDI Naturalplay and MIDI Notes, MIDI Notes 4 Chan modes.
	Aux Level	58	Maps to 127	
	All Notes Off	123	" "	
Non-CC messages				
	Pitch Bend			
	MIDI Clock			Active when Delay tempo set to MIDI
	Bank select		0-3	Presets 1-128=Bank 0, 129-256=Bank 1, 257-384=Bank 2, 384-400=Bank 3
	Preset select		0-127	0=preset #1, 1=preset #2 etc.
	MIDI Notes			

Preset List

1	ANOTHER BRICK	Showcase
2	KANYE LOCKDOWN	
3	CLOSE UP 3RD	
4	TWO HIGH	
5	BRIGHT DOUBLE	
6	NOW HEAR THIS!	
7	DISTORTO	
8	BOP-A-LULA	
9	TAP TEMPO 1/4	
10	OCT UP DOUBLE	
11	DEEPER YOU	
12	CHORALE THREE	
13	OPERA DIVAAAAH!	
14	M-C REVERSER	
15	TUNED 2UP	
16	M-C STUTTER	
17	DEEP DUCKED FX	
18	MICROPITCH	
19	ROTARY	
20	ECHO DOWN	
21	UNISON CHOIR	Doubling & Octaves
22	DOUBLE REFLECT	
23	ARENA CHANT 2	
24	DOUBLE BALLAD	
25	OVERDUB SLAP	
26	PANNED DOUBLES	
27	MASSIVE STACK	
28	LOOSE DOUBLE	
29	SILKY DOUBLES	
30	100% WET UNISON	
31	THE MASSES	
32	UNISON F&M	
33	UNISON M&F	
34	GENDER DOUBLES	
35	BON J-U GIVE LV	
36	LAGER & ALE	
37	MIXED OCTAVES	
38	OCT UP GROUP	
39	OCTAVE POP	
40	OCT DOWN DOUBLE	
41	OCT DOWN GROUP	
42	BASSMAN	
43	DRONE & ECHO	
44	OCTAVE CHILD	
45	CHORALE TWO	Harmony
46	3RD UP GROUP	
47	3RD UP LADIES	
48	POP DUO	
49	3RD OCT BELOW	
50	BASS & 3RD UP	
51	CLOSE BELOW	
52	LOWER BACKUP	
53	6TH BELOW	
54	CLOSE 1UP+1DOWN	
55	FAR 1UP+1DOWN	
56	BASS & LOW	
57	MAMBAZO!	
58	FAR GENDERS	
59	FAR GENDRGROUP	
60	3RDS & 5THS L-R	
61	SIXTH ENCORE	
62	2UP+1DOWN	
63	1UP+2DOWN	
64	2UP+1DOWN+OCT	
65	1UP+2DOWN+OCT	
66	TWO LOW	
67	COUNTRY GIRLS	
68	POP TRIO	
69	STEREO PAIR 3+5	
70	THICK 2 ABOVE	
71	3RDS & 5THS BIG	
72	LOWER DUO	
73	LOWER TRIO	
74	LOWER & DOUBLE	
75	LOWER GUYS	
76	CHORALE ONE	
77	AUTOTUNE RADIO	HardTune
78	HARDTUNE OCTAVS	
79	T- ROOM	
80	MEDIUM CORR 20%	
81	GENTLE CORR 10%	
82	EASYTUNE	
83	T-PAINFUL	
84	CHURCH TUNE	

Preset List

85	HARD TUNE DELAY	
86	CROONER	Character
87	THINNER YOU	
88	POPEYE + OLIVE	
89	VALKYRIE DUO	
90	DEEPER YOU	
91	OCT DOWN MALE	
92	POPEYE LIVES	
93	DEEPEST YOU	
94	THINNEST YOU	
95	OCT UP FEMALE	
96	HIGHER CHOIR	Effects Harmony
97	PRO KIDS	
98	FREE FALLING	
99	STEVE MCQUEEN	
100	RUNNING ON MT	
101	MENS CHOIR	
102	YOU'RE NOTALONE	
103	U R ALTO	
104	U R SOPRANO	
105	SCALE JAZZ 1	
106	SCALE JAZZ 2	
107	SCALE JAZZ 3	
108	SHIFT -4 SEMI	
109	SHIFT +5 SEMI	
110	FIFTH DIVA	
111	TUNED UP+DOWN	
112	HARMONY CHOIR	
113	RADIOHARMNY DLY	
114	ANGELS RADIO	
115	DEEP DOWN	
116	ONE UP ROOM	
117	CHOIR ONE	
118	FADEOUT 3RD UP	
119	UP TWO ROOM	
120	SLAP ABOVE	
121	SLAP TRIO	
122	3UP FLANG DELAY	
123	FLANGE TWO HIGH	
124	FLANGE UP & DN	
125	SING WITH RADIO	
126	BEACH BOY RADIO	

127	TOE PLASTIC	
128	HIGHERCHOIR WET	
129	BIG BOTTM CHOIR	
130	3RD UP CHOIR	
131	4TH DOWN CHOIR	
132	6TH DOWN CHOIR	
133	BASSY CHOIR	
134	TUNED HARMONY	
135	GREGORIAN	
136	TUNED 1 BELOW	
137	LOWER ROBOTS	
138	UPPER ROBOTS	
139	RADIO GOSPEL	
140	JAZZ RADIO	
141	FLANGEY 3RD	
142	DELAYED UPPERS	
143	DELAYED HARMONY	
144	LIFE IN THE F L	
145	ELVIS RADIO	Special Effects
146	DIGERI-VOICES	
147	AMATEUR KIDS	
148	DARK SWIRL	
149	DOMINUS REQUIEM	
150	POWER CORDS	
151	TONE DRONE UNI	
152	UNI+5TH DRONES	
153	OCTAVE DRONE	
154	TONE DRONE DOWN	
155	TONE DRONE UP	
156	DIGERI-DISTORT	
157	OCTAVE FLANGE	
158	METAL DEMONS	
159	SPACE CHOIR	
160	STAGE AMP	
161	POWER CHORDS 2	
162	IN THE SEWERS	
163	POLTERGEIST	
164	AUTO PANNER	
165	I AM A WALRUS	
166	POWER CORD ECHO	
167	FLUTTER	
168	CYLON DRONE	

Preset List

169	CLOCK RADIO	
170	DISTORTED RADIO	
171	DIRTY SCREAM	
172	TRASH-IT	
173	OCTAVE TRASH	
174	PANNED ANGELS	
175	CHAOS	
176	SPIRAL DOWN	
177	BOLLYWOOD	
178	VOCALFUZZ	
179	SOLOIST RIGHT	
180	DIST DELAY	
181	SIMPLE SLAP	
182	LONGVERB DUCKED	
183	LIGHT FLANGE	
184	SLAP 'N' ECHO	
185	DOUBLE CHORUS	
186	CHORUS PLATE	
187	CRUNCH DETUNE	
188	MONO SPRING	
189	SMOOTHED VERB	
190	GORGEOUS HALL	
191	PRACTICE ROOM	
192	JUST AMBIENCE	
193	SLAP DUCK	
194	HOT SLAP	
195	SIMPLE CHORUS	
196	IF I WERE ABOY	
197	DUCKING TAPS	
198	MOD DELAY	
199	TRIPLET PONG	
200	TUNE TRANS ECHO	
201	BANDPASS VERB	
202	1/8N FILTERED	
203	ALTERNATIVE	
204	THICK OVERDRIVE	
205	PING PONG VERB	
206	MULTITAP ECHO	
207	1/2N TUNED ECHO	
208	1/16 DISTORT	Rhythmic
209	LR SYNCHOPATION	
210	RANDOM GENDERS	

211	CHOIR PAN RAND	
212	TWO HIGH PANNER	
213	HARD LR PAN	
214	SALSA HARMONY	
215	FUN FOR HOURS	
216	GENDER DOUBLES	
217	BASIC NOTES 8V	Notes Harmony
218	NOTES 1V FEMALE	
219	EASY NOTES 8V	
220	NATURAL NOTES	
221	NOTES 1V MELODY	
222	NOTES 1V MALE	
223	NOTES UNI STACK	
224	NOTES UNI + YOU	
225	THICK NOTES 4V	
226	NOTES 8V WIDE	
227	NOTES 8V MALES	
228	NOTES 8V FEMALE	
229	NOTES SLOW ATK	
230	NOTES HEAVEN	
231	NOTES HEAVEN 2	
232	NOTES 1V VOCODR	
233	VOCODER SHIMMER	
234	VOCO PORTA DIST	
235	NOTES WET CHOIR	
236	NOTES CHOIR MEN	
237	NOTES CHOIR FEM	
238	NOTES CHOIR+UNI	

Scales Diagram

The table at right shows harmony notes in the key of C for the three major and three minor scales.

The shades cells indicate harmony intervals that illustrate the differences between scales.

The term "nc" means "no change". This indicates that the harmony note will remain at the previous interval even though the input note has changed from the adjacent upper or lower note.

Key of C		Input (Sung) Note												
Scale		C	C#	D	Eb	E	F	F#	G	G#	A	Bb	B
MAJ1	3rd Above	E	nc	F	nc	G	A	nc	B	nc	C	D	D
	5th Above	G	nc	A	nc	B	C	nc	D	nc	E	F	F
MAJ2	3rd above	E	nc	F	nc	G	A	nc	C	nc	C	D	D
	5th above	G	nc	A	nc	C	C	nc	E	nc	E	F	F
MAJ3	3rd above	E	nc	F	nc	G	A	nc	Bb	nc	C	D	D
	5th above	G	nc	A	nc	Bb	C	nc	D	nc	E	F	F
MIN1	3rd above	Eb	nc	F	G	nc	Ab	nc	Bb	C	nc	D	nc
	5th above	G	nc	Bb	Bb	nc	C	nc	D	Eb	nc	F	nc
MIN2	3rd above	Eb	nc	F	G	nc	A	nc	Bb	C	nc	D	nc
	5th above	G	nc	A	Bb	nc	C	nc	D	Eb	nc	F	nc
MIN3	3rd above	Eb	nc	F	G	nc	Ab	nc	B	C	nc	D	nc
	5th above	G	nc	A	Bb	nc	C	nc	D	Eb	nc	F	nc

Frequently Asked Questions (FAQ)

Where can I find support for this product?

TC-Helicon has a comprehensive support system for our products. Go to www.tc-helicon.com/support and click on the links below either Support by Product or FAQ and Contact.

I can't set Tap tempo for some presets, what's happening?

These are set to a specific time. To make them Tap-able, find the Delay edit tab in the Edit menu and set the Source parameter to Tap. Store if desired.

Why am I hearing distortion?

The Transducer effect has distortion styles but if that effect is off, press the Input Gain button while you sing to check that your input is not clipping.

I'm hearing feedback when I use VoiceLive Rack, how can I minimize that?

Adjust the gate in the Tone menu by increasing the Lead and Harmony attenuation and/or setting the Gate parameter to Manual and raising the Threshold. Ensure that monitors are pointing at the dead area of the mic. As a last resort, turn off Tone or reduce stage and monitor levels.

I'm hearing chorusing when I sing but no effects blocks are on, why is that?

This is due to the Pitch effect being active. It constantly adjusts your pitch to make you more in tune and you are hearing the difference between your voice through head resonance and the pitch corrected version in your PA or monitor.

The Mic Control parameter seems to be triggering on its own when I sing, what's happening?

A few input devices may cause this. You can a) switch mics b) turn off Mic Control in the Setup menu.

I have a MIDI keyboard connected to the MIDI In jack and both are on the same channel but still nothing's happening, do I need to adjust something?

Set the USB Control parameter in the System tab of the Setup menu to Off.

I've connected the input and output to my PA but I'm not getting any signal into or out of VoiceLive Rack, what's up?

Confirm that the Output mix control is turned up. Note that 0dB means "full" not "off". Check that the Digital In parameter in the I/O tab of the Setup menu is set to either USB Stereo or S/PDIF Stereo.

Specifications

▶ Analog Inputs

Connectors, balanced	Mic.: XLR, Line: 1/4" phone jack, Guitar: 1/4" phone jack, Aux: 1/8" stereo mini jack
Input Impedance: Bal./Unbal.	Mic.: 2.14/1.07 kOhm, Line: 13/6.5 kOhm
Mic Input Level @ 0 dBFS	-49dBu to +10dBu
Line Input Level @ -37 dBu to +22 dBu	-37 dBu to +22 dBu
EIN @ Max Mic Gain Rg = 150 Ohm	-126 dBu
Mic/Line Input SNR	> 107 dB
Guitar Input impedance	1 MOhm
Guitar Input Level @ 0 dBFS	14 dBu to -4 dBu
Guitar Input SNR	>104dB
Aux Input Level @ 0dBu	+2dBu
A to D Conversion	24 bit, 128 x oversampling bitstream via S/PDIF, 16 bit via USB, 110dB SNR A-weighted.

▶ Analog Outputs

D to A Conversion	24 bit, 128 x oversampling bitstream via S/PDIF, 16 bit via USB, 115dB SNR A-weighted
Connectors, balanced	XLR and 1/4" phone jack
Output Impedance Bal./ Unbal.	100/50 Ohm
Output Range (Line/Mic Level)	16 dBu / 0dBu
Dynamic Range	> 109 dB, 20 Hz to 20 kHz
Frequency Response	+0/-0.3 dB, 20 Hz to 20 kHz
Headphone Out	1/8" Mini stereo jack, 32 Ohm +16dBu max (180mW max)

▶ Digital Inputs and Outputs

Connectors	RCA Phono (S/PDIF), USB-B
Formats	S/PDIF (24 bit), EIAJ CP-340, IEC 958
Sample Rates	44.1 kHz, 48 kHz,88.2kHz, 96kHz

▶ EMC

Complies with	EN 55103-1 and EN 55103-2 FCC part 15, Class B, CISPR 22, Class B

▶ Safety

Certified to	IEC 65, EN 60065, UL6500 and CSA

Specifications

▶ Environment

Operating Temperature	32° F to 122° F (0° C to 50° C)
Storage Temperature	-22° F to 167° F (-30° C to 70° C)
Humidity	Max. 90 % non-condensing

▶ Control Interface

USB	USB-B
MIDI	In/Out/Thru: 5 Pin DIN
Pedal	1/4" TRS phone jack

▶ Supplementary

Display	192 x 64 Blue STN LCD, White back light
Dimensions	488mm x 133mm x 88mm
Weight	5 lb. (2.3 kg)
External Power Supply Mains Voltage	100 to 240 VAC, 50 to 60 Hz (auto-select)
Power Consumption	<14 W

Technical specifications are subject to change without notice

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